Georgia Immunization Study

– 2015 –

GEORGIA
DEPARTMENT
of PUBLIC HEALTH

Immunization Program
Acute Disease
Epidemiology Section

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Executive Summary

The 2015 Georgia Immunization Study (GIS) was conducted by the Georgia Department of Public Health Epidemiology Program, Georgia Immunization Program, and Public Health Districts.

The 2015 GIS employed a retrospective cohort research design to determine the up-to-date immunization rate for 2-year-old children born in the State of Georgia. Immunization history data for 18 Health District cohorts of children who turned two in January 2015 were analyzed to calculate these rates. Identifying information was obtained from electronic birth records, and immunization history data were collected primarily via the Georgia Registry of Immunization Transactions and Services (GRITS). Immunization rates for the 4:3:1:3:3:1:4 series (4 DTaP, 3 Polio, 1 MMR, 3 Hib, 3 Hepatitis B, 1 Varicella, and 4 PCV) were based on the childhood immunization and catch-up schedules recommended by the Advisory Committee on Immunization Practices (ACIP) in 2013[1].

Each child's immunization record was reviewed to determine if it was up-to-date (UTD) with vaccinations. If the child's record was not UTD, an effort was made by local public health staff to contact parents, guardians and providers to obtain any missing immunization history data. If further follow-up revealed that the child was truly not up-to-date, the data collection process served as a reminder-recall system for parents and providers.

If all of the 4:3:1:3:3:1:4 series dates occurred before the child reached 24 months of age or if the series was completed according to the ACIP catch-up schedule guidance, the child was classified as *up-to-date by 24 months*. Children were excluded from the *up-to-date by 24 month*s classification if at least one of the 4:3:1:3:3:1:4 dates occurred after the child reached 24 months of age and did not meet the catch-up schedule recommendations. **In 2015, the Georgia statewide up-to-date immunization rate by 24 months was 82.7 percent, up from 82.3 percent in 2014 (page 18, Table 2).** The 2015 immunization rate calculations have been revised to incorporate a stricter adherence to vaccination dates and birth date, which may account for a general decrease in immunization rates this year. The 2014 rates have been updated in this report to reflect this new calculation change.

There was considerable variation by District in the percent of 24-month-old children found to be UTD by 24 months, ranging from 70.8 percent in the South Central District (5-1) to 90.2 percent in the Coastal District (9-1). Between 2014 and 2015, there was a 0.4 percentage point increase in the UTD by 24 months rate statewide. The greatest UTD by 24 months improvement was observed in the Clayton District (3-3), which had an 8.2 percentage point increase from 2014 to 2015 (page vii, Appendix Table D-1).

The vaccine completion rate at the end of the study period was calculated as *up-to-date by end of data collection*. Some variation remained by District in the percent of 2-year-olds reported to be fully immunized by the end of the data collection period, ranging from 80.0 percent in the DeKalb District (3-5) to 97.9 percent in the Waycross District (9-2). It should be noted that DeKalb's data collector position was unfilled during a large portion of the study period which may have affected their rates.

Efforts to bring children up-to-date resulted in an overall 9.1 percentage point increase in the immunization rates between 24 months of age and the end of the data collection period statewide (page vii, Appendix Table D-1). This increase provides evidence that many of the children who are not up-to-date by 24 months can be brought up-to-date within six months if parent outreach and educational measures are taken. The greatest impact was observed in the South Central District (5-1), where up-to-date immunization rates increased 20.8 percentage points by the end of the data collection period (page vii, Appendix Table D-1). Although the majority of immunizations in our sample were administered in the private sector, the increase in up-to-date immunization rates by the end of the data collection period is a testament to how instrumental District- and County-level public health staff can be in raising childhood immunization rates for a selected group of children. In addition, this increase shows that parents want their children to stay current on their vaccinations, but may benefit from reminders and follow-up from their providers.

An additional immunization rate was calculated: *up-to-date by 24 months based on GRITS alone*. This rate represents the percentage of study participants whose vaccines were UTD by 24 months based only on the information found in GRITS, i.e. no follow up with parents or providers. The UTD immunization rate based on

[1] Department of Health and Human Services – Centers for Disease Control and Prevention. (February 1, 2013). MMWR weekly: Recommended Immunization Schedule for Persons Aged 0 Through 18 Years --- United States, 2013. MMWR 2013; 63(01). Retrieved from http://www.cdc.gov/mmwr/preview/mmwrhtml/su6201a2.htm

GRITS data alone for the state was 79.7 percent, 1.6 percentage points higher than 2014 and 3.0 percentage points below the UTD by 24 months rate for 2015; indicating that GRITS is well utilized among GA practitioners and serves as an excellent source of vaccination information for young children.

Although acute infection with Hepatitis B causes severe disease in only a small proportion of those infected, the greater burden of disease lies in those cases progressing to chronic infection, cirrhosis and liver cancer later in life. Therefore, timely immunization practices with hepatitis B vaccine are a high priority for the Georgia Immunization Program, as well as for providers and hospitals throughout the state. **Among the 2015 study sample 81.8 percent received their first dose of hepatitis B vaccine at birth (page viii, Appendix Table D-2), down from 85.6 percent in 2014. In addition, the percentage of children who received the entire 3-dose hepatitis B series by 24 months of age decreased from 96.2 percent in 2014 to 95.9 percent in 2015.** These data suggest that the best way to fully protect children from Hepatitis B infection by 24 months of age is to begin vaccination at birth. Credit goes to birthing hospitals, obstetricians, pediatricians and public health staff who have been dedicated to this cause.

Although the percentage of Georgia children who received the fourth dose of DTaP by 24 months of age remained the same in 2015, it continued to significantly lag behind the percentage of children who received the third dose by 24 months of age. In fact, 95.6 percent of children received three doses of DTaP by 24 months of age while only 84.7 percent received their fourth dose in 2015 (page 18, Table 2).

The third dose of DTaP can be given as early as 6 months of age; however, the fourth dose must be delayed until at least 12 months of age and 6 months after the third dose. These results suggest that patient outreach efforts specific to the fourth dose of DTaP may be helpful for parents after their child's one year check-up.

Medicaid eligibility, entered into GRITS by providers at time of vaccination, was analyzed to determine Medicaid status at time of vaccine administration. Participants were assigned into categories based on their Medicaid coverage (Medicaid both years, first year only, second year only and never covered by Medicaid). The UTD rate by 24 months (49.2%) for children who were covered by Medicaid the first year, but not the second year, were much lower than any of the other categories, including those not covered by Medicaid either year (Table 5). Further analysis revealed that vaccines that are typically administered after 12 months (MMR, Varicella and DTAP#4) were less likely among those whose Medicaid coverage only lasted the first year of life (Table 6). Reasons for the discontinuation of Medicaid during the second year of life were sought during the phone interview, but, in most cases, the reason could not be determined due to loss of contact after the initial interview (Table 7).

Perhaps one of the most important parts of the 2015 report is the list of the top three Health Districts for various categories, including response rates, series immunization rates, and antigen-specific immunization rates (page 23, Table 9). These rankings highlight our *Immunization Champions*; Districts challenged by a specific measure are encouraged to reach out to these champions to identify strategies for success.

The 2015 GIS report offers the people of Georgia and its Health Districts a chance to study demographic and immunization history data simultaneously, so that evidence-based programs can be created to raise immunization rates across the State of Georgia. The 2015 data clearly show that although the vast majority of immunizations are administered outside of public health clinics, public health staff can effectively collaborate with parents and private sector providers and have an impact on improving immunization coverage rates.

Abbreviations & Vaccine Names

Abbreviations	Definitions
2YO	Two-year-old
ACIP	Advisory Committee on Immunization Practices
CDC	Centers for Disease Control and Prevention
GIS	Georgia Immunization Study
GRITS	Georgia Registry of Immunization Transactions and Services
NIS	National Immunization Survey (CDC)
UTD	Up-to-date [immunization history]
WIC	Women, Infants, and Children Program
Vaccine Names	
DTaP	Diphtheria, Tetanus, and acellular Pertussis [vaccine]
IPV	Inactivated Polio Virus [vaccine]
MMR	Measles, Mumps, Rubella [vaccine]
HepB	Hepatitis B [vaccine]
Hib	Haemophilus influenza type b [vaccine]
Varicella	Varicella (chicken pox) [vaccine]
PCV	Pneumococcal Conjugate Vaccine
Rotavirus	Rotavirus [vaccine]
Influenza	Seasonal Influenza [vaccine]
HepA	Hepatitis A [vaccine]

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Section I

Project Overview

Methods

Study Design

The annual Georgia Immunization Study (GIS) employs a retrospective cohort research design to ascertain the up-to-date (UTD) immunization rates for 2-year-old children born in the State of Georgia. Immunization history data for cohorts of children who turned two in January, 2015 from 18 Health Districts were analyzed to calculate these rates. Identifying information was obtained from electronic birth records, and immunization history data were collected primarily via the Georgia Registry of Immunization Transactions and Services (GRITS). Immunization rates for the 4:3:1:3:3:1:4 vaccine series (4 DTaP, 3 Polio, 1 MMR, 3 Hib, 3 Hepatitis B, 1 Varicella and 4 PCV vaccine doses) were based on the childhood immunization and catch-up schedules recommended by the Advisory Committee on Immunization Practices (ACIP) in 2013.

During the six-month data collection period, each immunization date was compared to the child's birth date to determine whether it was administered before or after 24 months of age. If all of the 4:3:1:3:3:1:4 series dates occurred before the child reached 24 months of age or if the series was completed according to the ACIP catch-up schedule guidance, the child was classified as up-to-date by 24 months. Children were excluded from the up-to-date by 24 months classification if at least one of the 4:3:1:3:3:1:4 dates occurred after the child reached 24 months of age and did not meet the catch-up schedule recommendations.

A distinction was made between "UTD by 24 months" and "UTD by end of data collection" because the data collection process, which involved contact with each child's parent and healthcare provider, indirectly served as a reminder-recall system. Many of the parents of study participants were simply unaware that their child was not current on their immunizations; therefore, the difference between the percentage of children *UTD by 24 months* and children *UTD by end of data collection* may be a proxy measure of the impact of parent and provider contact in raising immunization rates.

The third rate calculated, *UTD by 24 months based on GRITS alone*, served to ascertain how accurately GRITS data reflect UTD immunization rates by 24 months of age, without parent/provider contact.

All of the UTD immunization rates (*UTD based on GRITS alone*, *UTD by 24 months* and *UTD by end of data collection*) were calculated for the state sample and the District samples, as well as for demographic groups within these samples.

Target and Sample Populations

The target population of the 2015 GIS included all 24-month-old children born in the State of Georgia in 2013. A sample of 2,225 children born in the month of January 2013 was selected for the study. The sample design allowed for independent estimates to be calculated for each of the 18 Health Districts in the state. The final sample estimate for the state was based on weighted data to account for differential probabilities of selection for each Health District and selected from the total number of statewide births during the month of January 2013. The number of children randomly selected from each District depended on population distribution statistics, response rates and District immunization rates from the 2014 GIS. Information for each child, including birth certificate data, was collected.

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Examples of the type of birth certificate information obtained for each child included:

- Child's first, middle and last name
- Child's gender
- Child's date of birth
- Mother's residential and mailing address(es)
- Mother's residential County
- Mother's first, middle and last name
- Father's first, middle and last name (if available)
- Mother's race and ethnicity
- Mother's level of education
- Mother's marital status
- Mother's age

Other demographic variables used in the analysis, such as Provider Type and Number of Providers, were obtained from GRITS. The WIC enrollment variable was collected for each child by matching the names and dates of birth for all of the sample children with WIC enrollment data. If a child was found to be enrolled in WIC for any amount of time during their first 24 months of life, they were designated as "enrolled in WIC".

Provider-related variables were compiled using GRITS data. When the data were originally collected, the number of providers was recorded. Each child was classified as having "One", "Two", or "Three or more" providers.

The "Provider Type" variable was determined based on the location where each individual vaccine was administered (see Part III: Immunization History, below). If a child received vaccines exclusively in private provider offices, the child was classified as "Private Sector Only." If a child received vaccines exclusively in public health clinics, the child was classified as "Public Sector Only." If a child received vaccines in both private provider offices *and* public health clinics, the child was classified as "Both private and public sector."

Data Collection

An electronic web-based data collection system named "TWOY" was used to systematically collect the required information for each child. The TWOY system follows the recommended schedule of childhood immunizations jointly approved by the Advisory Committee on Immunization Practices (ACIP), the American Academy of Pediatrics (AAP) and the American Academy of Family Physicians (AAFP).
The TWOY data collection system contains six distinct sections to be completed by the public health data collectors: Child, Medicaid Eligibility, Notes, Guardians, Providers and VX List (Immunization History).

Data collection was carried out primarily by County and District Public Health Nurses. Data collectors in each Health District participated in training via conference call at the start of the data collection period. A training manual was also provided and made available on the TWOY log-in screen.

Data Collection Protocol

Step #1: Search for immunization records at state and local health departments.

Before the data collection process began at the Health District level, the Principal Investigator at the State Epidemiology Office queried GRITS records and loaded the immunization history of each child into the TWOY system. If a child was up-to-date (UTD) at this point, the child was listed as "Complete, Based on Initial GRITS Record," and no longer required follow-up. If a child was *not* UTD at this point, the data collection process was passed to the District staff, with the dates found in GRITS already entered into the TWOY system. Next, data collectors reviewed

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GRITS records or health department records for additional immunization history. If the child's immunization record was still incomplete, the data collectors proceeded to Steps 2 and 3.

Step #2: Search for immunization records by contacting the parent(s) and/or guardian(s).
In this step, data collectors used the contact information from the birth certificate or any updated contact information found at the health department, provider's office or in GRITS to contact the child's parent.

Parents were then contacted by phone and/or letters and asked to provide an immunization history or the location of immunization information for their child (i.e., the name of the doctor or clinic office). Data collectors also sent consent forms to parents. In some cases, representatives made home visits to collect data.

Step #3: Search for immunization records through private physician(s).
In this step, data collectors contacted private physicians by phone or fax and requested the child's immunization history. Most physicians preferred to respond by updating the child's immunization history in GRITS. In some cases, providers preferred to communicate by phone, fax or office visit.

Step #4: Data returned to State Epidemiology office and checked for accuracy.
Using the TWOY system, data collectors completed follow up on all children by the end of the six-month data collection period. All completed records were reviewed by the Principal Investigator throughout the process. Attempts were made to resolve any unclear information before data cleaning using SAS 9.4.

Data Analysis

The 2015 data analysis methods were similar to those employed in 2014. Analyses were done using SAS 9.4 software and macros developed by the Principal Investigator.

Demographic variables were used to determine which demographic groups were more or less often *UTD by 24 months*. UTD immunization rates for demographic groups were assessed at both the State and District levels.

Up-to-date (UTD) immunization rates were calculated using each individual vaccine date for each participant. An immunization was classified as given prior to the 24 month birthday if the difference between the dose date and the child's DOB was equal to or less than 24 months; this was the case even for dates that were not originally found in the child's GRITS record. For a child to be considered UTD by 24 months, all of the doses in the 4:3:1:3:3:1:4 series had to be given within 24 months of the child's birth date or had to meet the ACIP catch-up conditions. The 2015 immunization rate calculations have been revised to incorporate a stricter adherence to vaccine and birth dates which may account for a general decrease in immunization rates this year. The 2014 rates have been updated to reflect this new calculation change.

Chi-square tests were run on demographic variables to determine if there were significant differences in UTD by 24 months rates within groups. Groups with more than 2 categories were compared using partitioned Chi squares if the full model was significant.

To account for possible scheduling delays by physician office staff, a 2-week grace period was applied to the 24-month calculations.

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Limitations

The following describe important limitations of the study that should be considered when interpreting study results:

1. There were three limitations related to sampling:

- Although the study included a random sample of children born in Georgia during January 2013 and, thus, represented a fair estimate of immunization rates for all 2-year-olds born in 2013, it could not account for variations that may routinely occur in other months of the year.

- Second, limiting the sample to children born in one month does not form the basis of a surveillance system capable of detecting changes in the health care system.

- Third, there may be children in the eligible sample who were erroneously included in the eligible sample and listed as unable-to-locate. Examples of this type of error would be cases where a child died, was adopted, or was part of a military family, but the child's ineligibility related to these circumstances never became known to the public health data collectors because the child could not be found.

2. Response rates for each District are included on the first and second pages of all District reports. Response rate is calculated by subtracting the number of "Unable to Locate" children by the number of eligible participants and then dividing by the number of eligible participants. Caution should be taken when interpreting immunization rates for a District with a low response rate. The reason for this necessary caution is that the children who are unable-to-locate could also be the least UTD. However, we cannot use their immunization history without knowing that it is current, so they must be excluded. Table 1 (right) shows how the response rate was calculated for the state sample; this same method was used for each of the Health District samples.

3. Maternal race was used as a demographic variable in the analysis but some race categories were not used in analyses due to an insufficient number of participants. The categories included in analysis were:

- White (n=985)
- Black or African American (n=699)
- Asian (n=59)
- Multiracial (n=72)

Table 1: Sampling Scheme, Georgia, 2015

	2014 (n)	2015 (n)
Original Sample	2,550	2,225
Ineligible	172	159
(Refused to Participate)	(12)	(15)
Eligible Sample	2,378	2,066
Unable to Locate†	135	64
Final Sample	2,243	2,002
Response Rate (%)	94.3	96.9

† Children were classified as "Unable to Locate" if every conceivable effort was made to locate and communicate with the child's guardian and the child's provider was either unknown or also unable to locate the guardian.

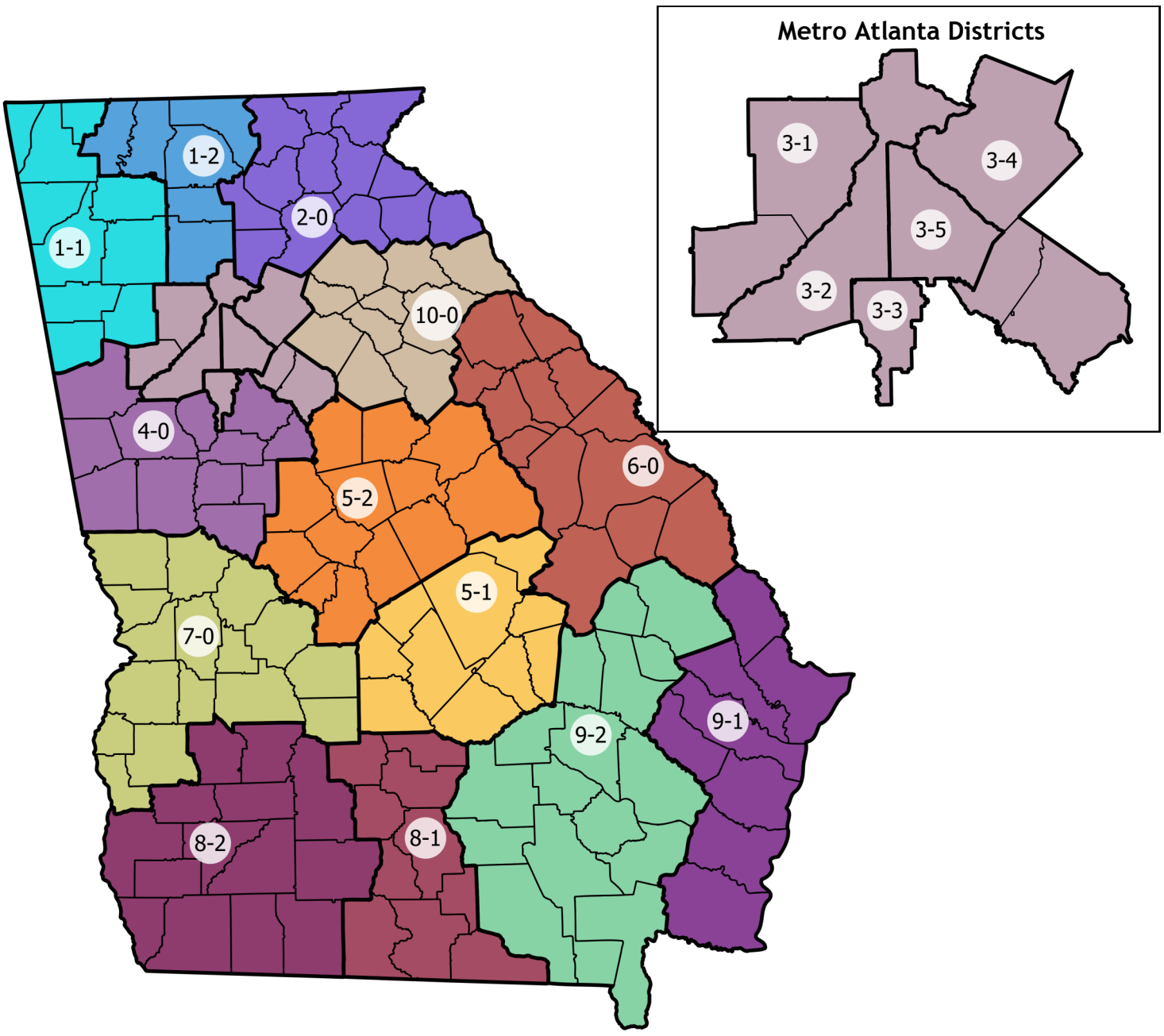
Section II

Statewide Results

State of Georgia

2015 Georgia Immunization Study

State-Level Immunization Study Staff	
Fabio R. Machado, MPH	Immunization Study Epidemiologist, Principal Investigator & Author
Jessica Tuttle, MD	Medical Epidemiologist, Primary Editor



State of Georgia

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The 2015 GIS sampled a total of 2,002 children born in January 2013 (Table 1).

Statewide, the up-to-date (UTD) immunization rate by 24 months in 2015 (82.7 %) was 0.4 percentage points higher than in 2014 (82.3%). The UTD immunization rate based on GRITS alone in 2015 (79.7%) was 1.6 percentage points higher than in 2014 (78.1%). The UTD immunization rate by end of data collection in 2015 (91.8%) was 1.7 percentage points lower than in 2014 (93.5%). Immunization rates that decreased are shown in red (Table 2).

Figure 1 shows a comparison of GIS vs National Immunization Survey (NIS) coverage rates from 2005 to 2015 for the 4:3:1:3:3:1:4 vaccine series.

Table 1: Sampling Scheme, Georgia, 2015

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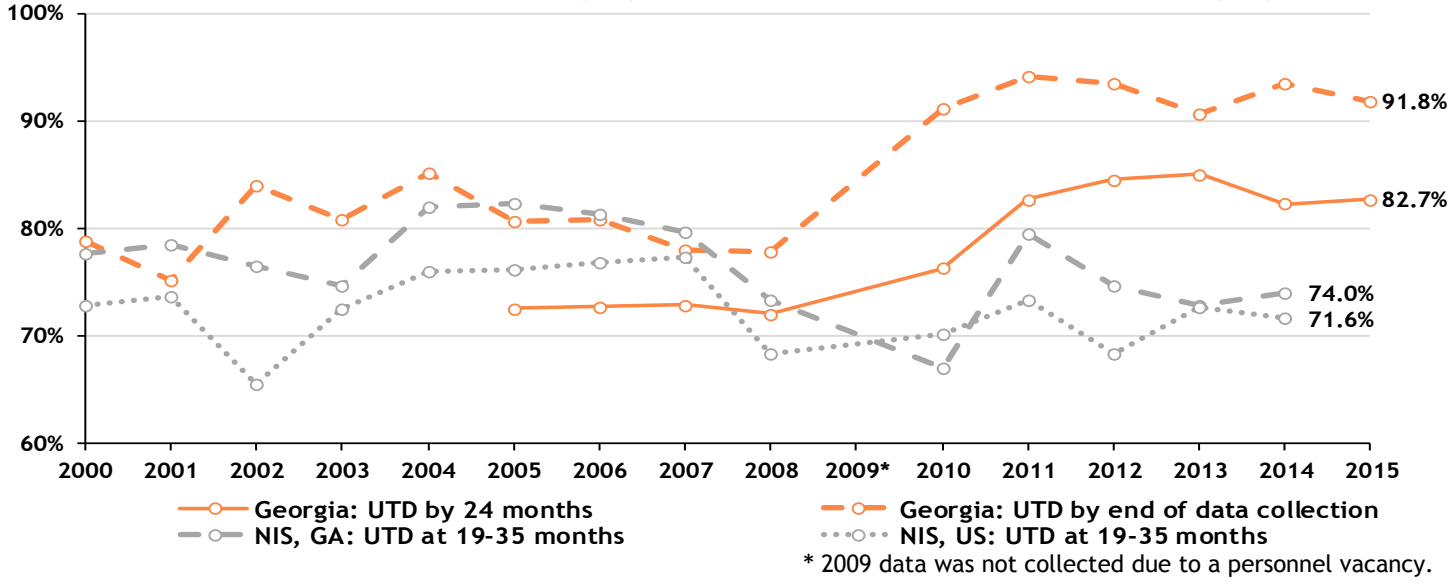
Table 2: Immunization Summary by Series and Vaccine Antigen, Georgia, 2014 and 2015

	2014** (%)	2015 (%)
UTD immunization rate* based on GRITS alone	78.1 ± 1.6	79.7 ± 1.8
UTD immunization rate* by 24 months	82.3 ± 1.5	82.7 ± 1.7
UTD immunization rate* by end of six-month data collection†	93.5 ± 1.0	91.8 ± 1.2
4 DTaP by 24 months	84.6 ± 1.4	84.7 ± 1.6
3 DTaP by 24 months	96.9 ± 0.7	95.6 ± 0.9
3 IPV by 24 months	96.0 ± 0.8	94.9 ± 1.0
1 MMR by 24 months	92.3 ± 1.0	91.2 ± 1.2
UTD Hib by 24 months	96.0 ± 0.8	93.9 ± 1.1
3 Hep B by 24 months	96.2 ± 0.7	95.9 ± 0.9
1 Varicella by 24 months	93.1 ± 1.0	92.0 ± 1.2
UTD PCV by 24 months	92.0 ± 1.1	91.1 ± 1.3
2 Rotavirus by 24 months	87.2 ± 1.3	87.0 ± 1.5
2 Hep A by 24 months	56.6 ± 1.9	58.8 ± 2.2
1+ Influenza by 24 months	63.6 ± 1.9	62.1 ± 2.1

† This value includes children who become UTD during the data collection period. This number is a testament to the efforts of District staff to reach the children originally listed as incomplete in their District.
* This rate includes children up-to-date by ACIP-recommended catch-up schedule.
** The 2014 rates were recalculated using a more accurate formula, same as the one used for 2015

Figure 1: Georgia Immunization Study (GIS) and National Immunization Survey Rates (NIS), 2005-2015



* 2009 data was not collected due to a personnel vacancy.

Table 3: Sample Population Demographics & Immunization Rates - Georgia, 2015

	Demographic Rates for All GA Births and State Sample		Immunization Rates for State Sample by Demographic		
	All 2013 Georgia births, N=132,150 (%)	Sample of 2013 January births n=2,002 (%)	UTD based on GRITS alone (%)	UTD by 24 months (%)	UTD by end of data collection (%)
State Overall Rates			79.7	**82.7**	91.8
Maternal Race‡,†					
White (n=985)	50.5	49.2	79.8	**82.8**	91.4
Black or African-American (n=699)	33.4	34.9	79.8	**82.0**	92.3
Asian (n=59)	3.5	2.9	79.7	**84.7**	89.8
Multiracial (n=72)	3.1	3.6	77.8	**81.9**	90.3
Maternal Ethnicity‡,†					
Non-Hispanic (n=1,747)	87.0	87.3	79.0	**81.9**	91.1
Hispanic (n=250)	13.0	12.5	84.8	**88.4**	96.4
Maternal Age‡,†					
<25 years old (n=784)	33.6	39.2	75.6	**77.9**	90.9
25-34 years old (n=957)	52.1	47.8	81.8	**85.2**	92.1
35+ years old (n=256)	14.2	12.8	84.4	**87.9**	93.4
Maternal Education‡,†					
Some college or higher (n=930)	52.2	46.5	82.6	**85.7**	92.6
High School Graduate/GED (n=632)	29.4	31.6	78.6	**81.3**	91.8
9th - 11th grade (n=278)	11.1	13.9	75.2	**77.7**	89.6
Less than 9th grade (n=81)	3.8	4.0	81.5	**82.7**	96.3
Maternal Marital Status‡					
Married (n=948)	54.4	47.4	82.4	**85.9**	92.5
Unmarried (n=1,022)	44.7	51.0	77.0	**79.5**	91.0
WIC$^{\theta}$					
Non-WIC (n=865)	-	43.2	80.2	**84.0**	92.1
WIC (n=1,137)	-	56.8	79.3	**81.6**	91.6
Number of Providers†,$^{\theta}$					
One (n=413)	-	20.6	78.0	**80.6**	88.6
Two (n=959)	-	47.9	82.3	**85.3**	93.0
Three or more (n=528)	-	26.4	79.9	**83.1**	95.3
Provider Type†,$^{\theta}$					
Public Sector Only (n=32)	-	1.6	65.6	**75.0**	87.5
Private Sector Only (n=779)	-	38.9	79.5	**82.9**	91.4
Both Private and Public Sector (n=1,089)	-	54.4	82.0	**84.5**	93.8

Θ Please refer to Appendix B for detailed information about the collection of information for this variable.
† Indicates that the percentages for this variable may not add up to 100.0% because the information was missing in some cases.
‡ Indicates that this variable corresponds to the data collected at the time of delivery.
Some demographic variables were measured outside of the birth record and could not be measured for the entire 2012 Georgia birth cohort, namely WIC status, Number of Providers and Provider Type.

Demographic Findings
The statewide results suggest that the following groups are the least often up-to-date on their immunizations by 24 months of age and may be reasonable recipients for targeted educational and outreach efforts:

- Children of non-Hispanic mothers
- Children of mothers under 25 years of age
- Children of mothers with less than a college or higher level of education
- Children of unmarried mothers

Please refer to Section III for Health District-specific rates and trends.

Immunization Administration
Of the 39,144 vaccines doses given to the sample cohort, 7.4% were given by public providers and 92.6% were given by private providers (Figure 2).

Figure 2: Immunizations Administered: Private vs. Public Sector, Georgia, 2015 (n= 39,144)

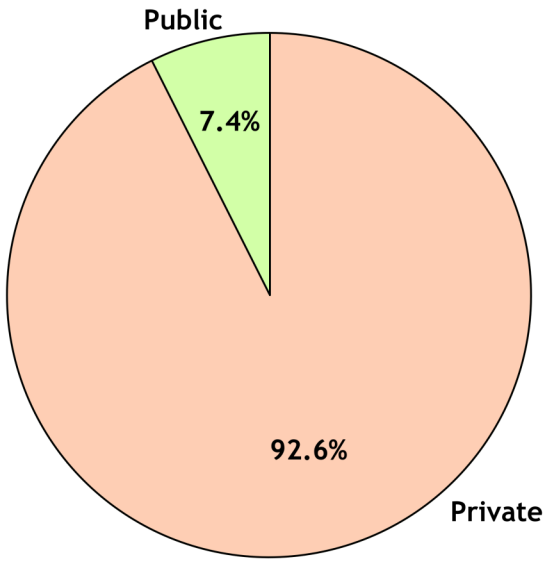


Table 4: Vaccine Antigen-Specific Immunization Coverage by 24 months of age, Georgia, 2011 - 2015

Vaccine Antigen	2011 - 2015	2011	2012	2013	2014	2015
4 DTaP by 24 months		85.8%	87.0%	84.6%	84.6%	84.7%
3 Polio by 24 months		96.7%	96.0%	95.7%	96.0%	94.9%
1 MMR by 24 months		93.0%	93.2%	92.6%	92.3%	91.2%
UTD Hib by 24 months		95.1%	96.1%	95.4%	96.0%	93.9%
3 Hepatitis B by 24 months		96.5%	96.1%	95.9%	96.2%	95.9%
1 Varicella by 24 months		93.9%	94.2%	93.5%	93.1%	92.0%
UTD PCV by 24 months		96.7%	92.2%	84.5%	92.0%	91.1%
2 Rotavirus*		83.8%	70.6%	83.4%	87.2%	87.0%
1 Influenza*,† by 24 months		60.1%	57.1%	29.3%α	63.6%	62.1%
2 Hepatitis A* by 24 months		53.1%	57.3%	57.2%	56.6%	58.8%
Hepatitis B birth dose*		83.4%	82.7%	83.6%	85.6%	81.8%

* This vaccine is not included in the 4:3:1:3:3:1:4 vaccine series, which is the series routinely measured for this age group.

† The first year of receiving the influenza vaccine requires 2 doses to be protected for that year; measuring 1 dose is a way to measure general interest in receiving the influenza vaccine, not completion or protection against influenza illness.
α There was a data collection error in 2013 with the rate of Influenza
Vaccines in the red font decreased from 2014 to 2015.

Immunization Rates by Vaccine Antigen
Statewide, the UTD immunization rate by 24 months for most vaccine antigens decreased in 2015 (shown in red) when compared to 2014 (Table 4), except for the 4th DTaP dose and Hepatitis A.

Of the 4:3:1:3:3:1:4 series vaccines, the UTD immunization rates by antigen slightly increased or decreased (less than 5 percentage point difference) from 2014 to 2015.

Vaccine Antigen-Specific Conclusions
Antigen-specific data suggest that the fourth dose of DTaP, MMR, PCV, Varicella and Hepatitis B birth dose vaccines could be the primary focus of State-level immunization campaigns.

Medicaid and Complete Status

Children whose vaccines are covered by Medicaid during the first year of life must have their Medicaid status renewed annually. The relationship between Medicaid status in the second year of life and UTD immunization status at 24 months was examined to determine if a discontinuation of Medicaid coverage in the second year of life contributed to lower immunization rates, particularly for vaccine doses given in the second year of life, such as the fourth DTaP dose.

Medicaid eligibility, entered into GRITS by providers at time of vaccination, was analyzed to determine Medicaid status at time of vaccine administration. Participants were assigned into categories based on their Medicaid coverage (Medicaid both years, first year only, second year only and never covered by Medicaid). The first year of life was defined as starting from the day of birth until the end of the month of the first birthday (for this study cohort, January 31, 2014). The second year of life was defined as starting on the month after the first birthday (February 1, 2014) until the second birthday.

The UTD rate by 24 months (49.2%) and by end of data collection (76.2%) for those children who were covered by Medicaid the first year but not the second year were much lower than any of the other categories, including those not covered by Medicaid either year (Table 5).

Table 5: UTD by Medicaid status, Georgia, 2015

Medicaid status	Percent of sample	UTD by 24 months	UTD by end of data collection
Medicaid 1st year and 2nd year (n= 1013)	50.6%	90.4%	96.9%
Medicaid 1st year but not 2nd year (n= 256)	12.8%	49.2%	76.2%
Medicaid 2nd year but not 1st year (n= 76)	3.8%	76.3%	89.5%
No Medicaid 1st year or 2nd year (n= 657)	32.8%	84.5%	90.3%
State (n=2,002)	**100.0%**	**82.7%**	**91.8%**

Selected vaccines, administered after 12 months, were analyzed based on Medicaid status and year given (Table 6). Vaccine administration during the first 12 months of life (up to January 31, 2014) did not differ greatly by Medicaid status. At 24 months greater differences can be observed between the Medicaid status categories. In general, those whose Medicaid coverage did not continue during the second year of life were the least likely to be UTD for each of the selected vaccines.

Table 6: UTD by 12 months and 24 months by Vaccine Antigens and Medicaid status , Georgia, 2015

Medicaid status	Varicella at 12 months	MMR at 12 months	DTAP dose 4 at 12 months	Varicella at 24 months	MMR at 24 months	DTAP dose 4 at 24 months
Medicaid 1st year and 2nd year (n= 1,013)	40.7%	36.8%	0.8%	98.4%	97.4%	92.2%
Medicaid 1st year but not 2nd year (n= 256)	36.7%	33.6%	2.0%	68.0%	66.4%	50.4%
No Medicaid 1st year or 2nd year (n= 657)	41.4%	31.8%	1.4%	90.7%	90.7%	86.9%

Medicaid and Incomplete Status

A total of 347 children were identified as incomplete at 24 months of age. Of these, 227 (65%) had immunizations covered by Medicaid during their first year of life. Of those, 97 (42%) remained on Medicaid during the second year of life while 130 (58%) were no longer on Medicaid during the second year. Data collectors attempted to determine, via parental interviews, why these children were not enrolled in Medicaid the second year of life but, were unable to interview the majority of parents, as evidenced by the 93% missing data in Table 7.

Improving collection of this data will be a key focus for the 2016 GIS.

Table 7: Reason for lapse in Medicaid status during second year of life among those not UTD by 24 months (incomplete), Georgia, 2015 (n=130)

Reason	Percent of those whose Medicare lapsed year 2 of life
Eligible, but did not recertify (n=2)	2%
No longer eligible for Medicaid, insured elsewhere (n=5)	4%
Refused/Delayed vaccines (n=2)	2%
Missing or couldn't contact parent (n=121)	93%

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District Immunization Rates

While the statewide UTD immunization coverage rate by 24 months was 87.6%, variation was seen between Districts. The Districts with the highest UTD immunization rates by 24 months are shown in green, while the Districts with the lowest UTD immunization rates by 24 months are shown in orange (Figure 3 and Table 8).

Response rates for each District are included on the second page of all District reports (Section III). Caution should be taken when interpreting immunization rates for a District with a low response rate because children who were classified as unable-to-locate could also be the least UTD, but must be excluded.

Note that the difference between coverage rates based on GRITS alone and up-to-date at 24 months of age is an indicator of how accurate GRITS records reflect these rates. Physician practices should be encouraged to utilize GRITS for immunization documentation to maintain its accuracy and thereby value.

Figure 3: UTD by 24 months Immunization Rates by District, Georgia, 2015

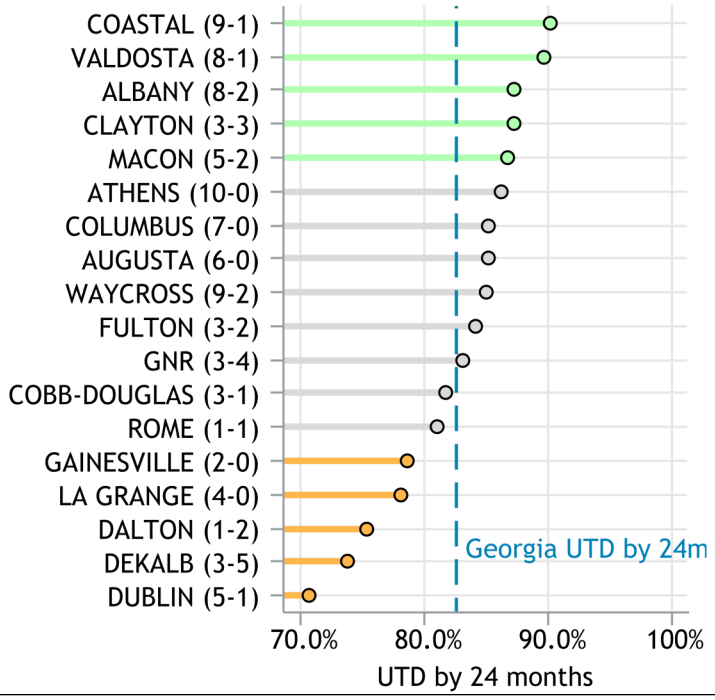

Table 8: District UTD Immunization Rates by 24 months and by End of Data Collection, Georgia, 2015

District	UTD by 24 months, GRITS alone (%)	UTD by 24 months (%)	UTD by end of data collection (%)	Final Sample Size (n)
1-1 Northwest (Rome)	80.4	81.1	91.6	143
1-2 North Georgia (Dalton)	74.6	75.4	89.8	118
2-0 North (Gainesville)	73.0	78.7	89.3	122
3-1 Cobb-Douglas	78.5	81.7	90.3	93
3-2 Fulton	83.3	84.3	90.7	108
3-3 Clayton	83.2	87.2	96.8	125
3-4 Gwinnett, Newton, Rockdale (GNR)	79.4	83.2	90.3	155
3-5 DeKalb	73.1	73.8	80.0	130
4-0 LaGrange	77.5	78.2	85.9	142
5-1 South Central (Dublin)	70.8	70.8	91.7	72
5-2 North Central (Macon)	85.5	86.7	94.0	83
6-0 East Central (Augusta)*	69.3	85.2	95.5	88
7-0 West Central (Columbus)	77.5	85.3	95.3	129
8-1 South (Valdosta)	89.6	89.6	96.2	106
8-2 Southwest (Albany)	86.2	87.4	95.4	87
9-1 Coastal (Savannah)	88.4	90.2	95.5	112
9-2 Southeast (Waycross)	85.1	85.1	97.9	94
10 Northeast (Athens)	81.1	86.3	92.6	95
Georgia	79.7	82.7	91.8	2,002

*District with a >10% difference between their GRITS alone rate and UTD by 24 months.

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Immunization Success Measures by Health District
Data analyses for this study were done on the state level, allowing for uniform data analysis covering all of the 18 Health Districts in Georgia. However, there are key measures that can be very telling of a Health District's success in keeping their children up-to-date on all of their immunizations by 24 months of age.

Please refer to Table 9 for a list of these success measures and the first-, second-, and third-placing Health Districts as applicable to each measure. The top portion of the table addresses the Districts who had the highest immunization coverage rates and response rates as well as one-year increases. Some of these measures represent an average over a five-year span and some are only relative to 2015 results.

The lower portion of the table addresses the vaccine antigen-specific coverage rates by 24 months and only includes 2015 results.

Congratulations to all of the District Immunization Champions - those ranking in the top three for any of the categories!

Table 9: District Immunization Champions, Georgia, 2015

Category	1st Place	2nd Place	3rd Place	State
Highest Response Rate	Gainesville District (2-0) & Cobb-Douglas District (3-1) 100%	Waycross District (9-2) 98.9%	Macon District (5-2) 98.8%	96.9%
Highest UTD by 24 months	Coastal District (9-1) 90.2%	Valdosta District (8-1) 89.6%	Albany District (8-2) 87.4%	82.7%
Highest UTD by 24 months, based on GRITS alone	Valdosta District (8-1) 89.6%	Coastal District (9-1) 88.4%	Albany District (8-2) 86.2%	79.7%
Highest UTD by end of data collection	Waycross District (9-2) 97.9%	Clayton District (3-3) 96.8%	Valdosta District (8-1) 96.2%	91.8%
Greatest Increase in UTD by 24 months from 2014 to 2015[Θ]	Clayton District (3-3) 15.2%	Columbus District (7-0) 12.5%	Valdosta District (8-1) 7.4%	0.4%
Greatest Increase in UTD from 24 months to end of data collection	Dublin District (5-1) 20.8%	Dalton District (1-2) 14.4%	Waycross District (9-2) 12.8%	9.1%
Highest Coverage*: 4+ DTaP Doses	Valdosta District (8-1) 92.5%	Athens District (10) 90.5%	Coastal District (9-1) 90.2%	84.7%
Highest Coverage*: 3+ Polio Doses	Albany District (8-2) 100%	Valdosta District (8-1) 98.1%	Waycross District (9-2) 97.9%	94.9%
Highest Coverage*: 1 MMR Dose	Cobb-Douglas District (3-1) 96.8%	Valdosta District (8-1) 95.3%	Athens District (10) 94.7%	91.2%
Highest Coverage*: UTD Hib	Albany District (8-2) 98.9%	Columbus District (7-0) 97.7%	Athens District (10) 96.8%	93.9%
Highest Coverage: Hepatitis B Birth Dose**	Macon District (5-2) 96.4%	Columbus District (7-0) 94.6%	Dublin District (5-1) 93.1%	81.8%
Highest Coverage*: 3+ Hepatitis B Doses	Albany District (8-2) 100%	Clayton District (3-3) 99.2%	Valdosta District (8-1) 99.1%	95.9%
Highest Coverage*: 1 Varicella Dose	Cobb-Douglas District (3-1) 96.8%	Augusta District (6-0) 96.6%	Valdosta District (8-1) 96.2%	92.0%
Highest Coverage*: UTD PCV	Cobb-Douglas District (3-1) 95.7%	Valdosta District (8-1) 95.3%	Columbus District (7-0) 93.8%	91.1%
Highest Coverage*: 2+ Hepatitis A Doses	Albany District (8-2) 70.1%	Coastal District (9-1) 67.9%	Columbus District (7-0) 66.7%	58.8%
Highest Coverage*: 1+ Influenza Doses	Albany District (8-2) 73.6%	Coastal District (9-1) 70.5%	DeKalb District (3-5) 68.5%	62.1%

[Θ] **Based on updated 2014 calculation.**
***Highest immunization coverage by 24 months of age.**
****Highest percentage of children who received the first dose of Hepatitis B within their first 4 days of life.**

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Findings Related to WIC Enrollment
Statewide results for the difference in UTD Immunization rate by 24 months between WIC-enrolled children and those not enrolled in WIC are shown in Table 10. No disparity is evident statewide or at the District level in most cases. Only Districts 5-1 and 9-2 had a significantly lower immunization rates by 24 months of age.

Immunization campaigns will vary by District based on demographic differences. Findings from this report may be useful in generating ideas for effective strategies.

Figure 4: Immunization Rates among WIC and Non-WIC Enrolled Children, Georgia, 2015

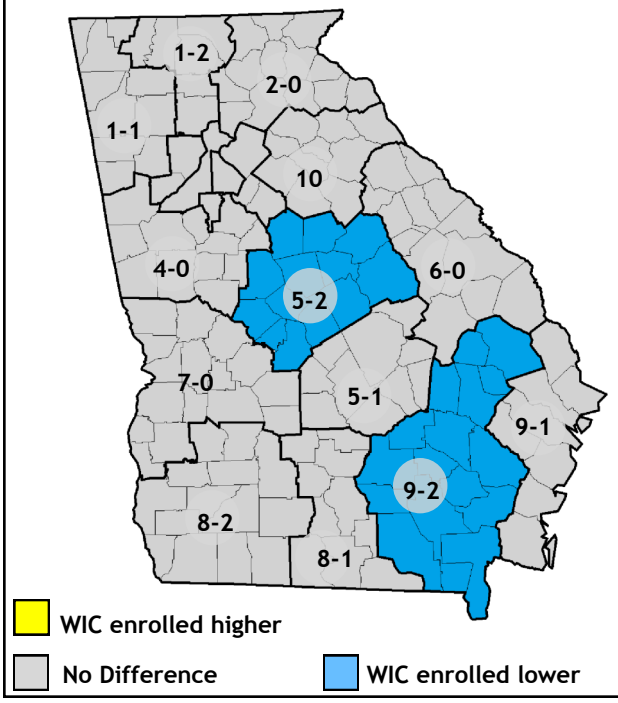


Table 10: Difference in UTD Immunization Rate by 24 months between WIC Enrollment Groups, Georgia, 2015

District	Immunization Rate for children enrolled in WIC	Immunization Rate for children *not* enrolled in WIC	Disparity (WIC Rate-Non -WIC Rate)	95% Confidence Interval of Difference
1-1 Northwest (Rome)	78.2%	84.6%	-6.4%	-19.3% - 6.4%
1-2 North Georgia (Dalton)	73.4%	77.8%	-4.3%	-20.1% - 11.4%
2-0 North (Gainesville)	81.9%	74.0%	7.9%	-7.3% - 23.2%
3-1 Cobb-Douglas	79.4%	83.1%	-3.6%	-20.6% - 13.3%
3-2 Fulton	83.3%	85.0%	-1.7%	-15.8% - 12.4%
3-3 Clayton	87.3%	87.1%	0.2%	-11.7% - 12.1%
3-4 Gwinnett, Newton, Rockdale (GNR)	82.7%	83.8%	-1.1%	-13.0% - 10.8%
3-5 DeKalb	72.6%	75.0%	-2.4%	-17.8% - 12.9%
4-0 LaGrange	75.6%	82.1%	-6.6%	-20.3% - 7.1%
5-1 South Central (Dublin)	75.6%	64.5%	11.1%	-10.8% - 33.0%
5-2 North Central (Macon)	80.4%	94.6%	-14.2%	-28.0% - -0.3%
6-0 East Central (Augusta)	84.6%	86.1%	-1.5%	-16.8% - 13.8%
7-0 West Central (Columbus)	83.5%	89.5%	-6.0%	-18.5% - 6.6%
8-1 South (Valdosta)	88.0%	93.6%	-5.6%	-17.1% - 6.0%
8-2 Southwest (Albany)	87.0%	88.9%	-1.9%	-18.8% - 15.0%
9-1 Coastal (Savannah)	92.3%	88.3%	4.0%	-7.1% - 15.0%
9-2 Southeast (Waycross)	82.2%	95.2%	-13.1%	-25.9% - -0.2%
10 Northeast (Athens)	80.0%	93.3%	-13.3%	-26.9% - 0.2%
Georgia	**81.6%**	**84.0%**	**-2.4%**	**-5.8% - 0.9%**

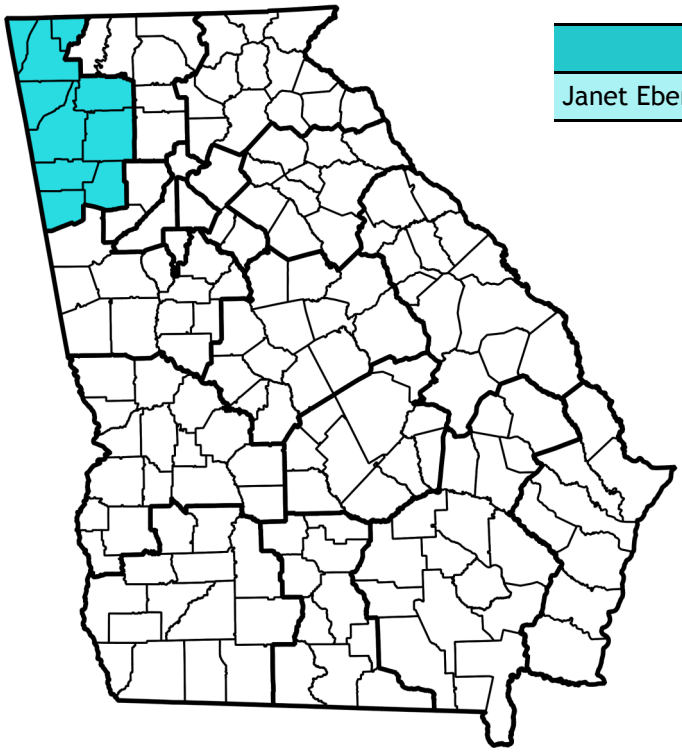
*If the confidence interval overlaps zero, then the difference between groups is not statistically significant.

Section III

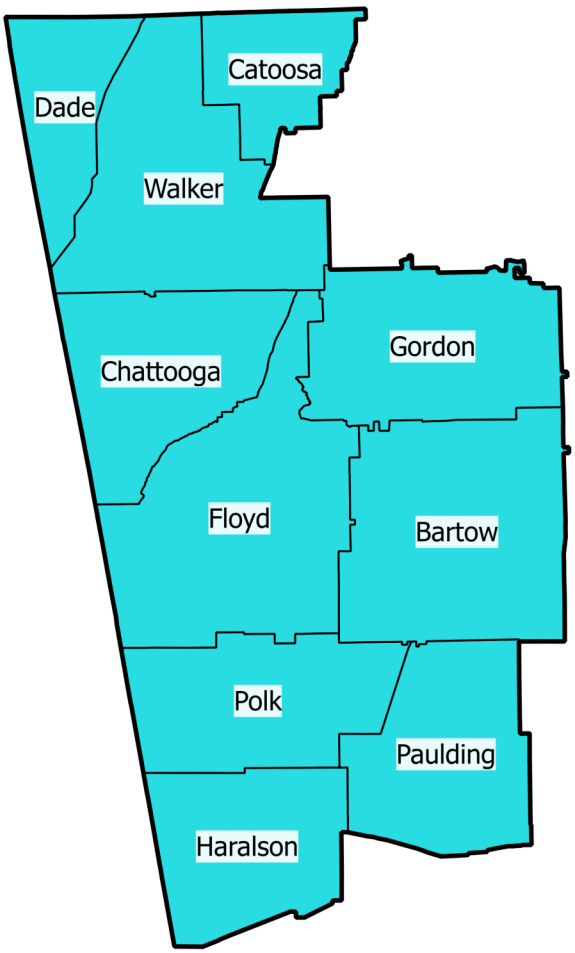
Health District Immunization Reports

District 1-1

2015 Georgia Immunization Study Report



District 1-1 Data Collection Team	
Janet Eberhart, RN, BSN	District Immunization Coordinator



County	Number in Final Sample
Bartow	28
Catoosa	5
Chattooga	2
Dade	1
Floyd	26
Gordon	14
Haralson	6
Paulding	46
Polk	7
Walker	8
District 1-1	**143**
District UTD by 24 months Immunization Rate	**81.1%**
State of Georgia	**2,002**
State UTD by 24 months Immunization Rate	**82.7%**

District 1-1

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The 2015 GIS sampled a total of 143 children in District 1-1 (Table 1-1-A).

For the District 1-1 sample, the up-to-date (UTD) immunization rate by 24 months of age (81.1%) was 0.3 percentage points lower than in 2014 (81.4%). The UTD immunization rate based on GRITS alone (80.4%) increased 2.5 percentage points from 2014 (77.9%). The UTD immunization rate by the end of data collection (91.6%) was 0.1 percentage points lower than in 2014 (91.7%). Immunization rates that decreased are shown in red (Table 1-1-B).

A comparison of GIS immunization rates between District 1-1 and Georgia for the 4:3:1:3:3:1:4 series, from 2005 to 2015, is shown in Figure 1-1-A.

Table 1-1-A: GIS Sampling Scheme, District 1-1, 2015

	District 1-1 (n)	State (n)
Original Sample	150	2,225
Ineligible	2	159
(Refused to Participate)	0	(15)
Eligible Sample	148	2,066
Unable to Locate†	5	64
Final Sample	143	2,002
Response Rate (%)	96.6	96.9

† Children were classified as "Unable to Locate" if every conceivable effort was made to locate and communicate with the child's guardian and the child's provider was either unknown or also unable to locate the guardian.

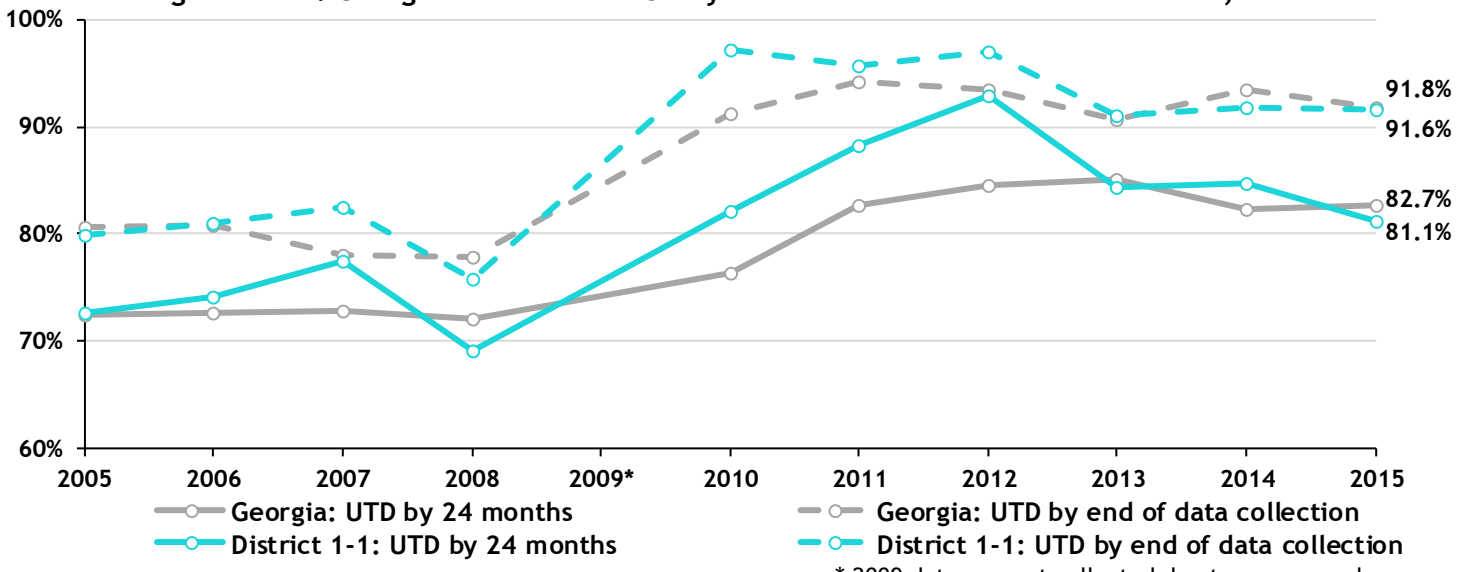
Table 1-1-B: Immunization Summary by Series & Vaccine Antigen, District 1-1, 2015

	District 1-1 (%)	State (%)
UTD immunization rate* **based on GRITS alone**	80.4 ± 6.5	79.7 ± 1.8
UTD immunization rate* **by 24 months**	81.1 ± 6.4	82.7 ± 1.7
UTD immunization rate* **by end of six-month data collection†**	91.6 ± 4.6	91.8 ± 1.2
4 DTaP **by 24 months**	82.5 ± 6.2	84.7 ± 1.6
3 DTaP **by 24 months**	94.4 ± 3.8	95.6 ± 0.9
3 IPV **by 24 months**	93.7 ± 4.0	94.9 ± 1.0
1 MMR **by 24 months**	88.8 ± 5.2	91.2 ± 1.2
UTD Hib **by 24 months**	93.0 ± 4.2	93.9 ± 1.1
3 Hep B **by 24 months**	95.1 ± 3.5	95.9 ± 0.9
1 Varicella **by 24 months**	89.5 ± 5.0	92.0 ± 1.2
UTD PCV **by 24 months**	89.5 ± 5.0	91.1 ± 1.3
2 Rotavirus **by 24 months**	92.3 ± 4.4	87.0 ± 1.5
2 Hep A **by 24 months**	53.8 ± 8.2	58.8 ± 2.2
1+ Influenza **by 24 months**	64.3 ± 7.9	62.1 ± 2.1

† Includes children who become UTD during the data collection period. This number is a testament to the efforts of District staff to reach the children originally listed as pending in their District.

* This rate includes children up-to-date by ACIP-recommended catch-up schedule.

Figure 1-1-A: Georgia Immunization Study and District 1-1 Immunization Rates, 2005-2015



* 2009 data was not collected due to a personnel vacancy.

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Table 1-1-C: District 1-1 Sample Demographics & Immunization Rates, 2015

	Demographics for State and District 1-1 samples		Immunization Rates for District 1-1 Sample		
	Sample of Jan. 2013 births n=2,002 (%)	District 1-1 sample n=143 (%)	UTD based on GRITS alone (%)	UTD by 24 months (%)	UTD by end of data collection (%)
District 1-1 Rates			80.4	**81.1**	91.6
Maternal Race‡,†					
White (n=113)	49.2	79.0	76.1	**77.0**	89.4
Black or African-American (n=17)	34.9	11.9	94.1	**94.1**	100.0
Asian (n=2)	2.9	1.4	100.0	**100.0**	100.0
Multiracial (n=1)	3.6	0.7	100.0	**100.0**	100.0
Maternal Ethnicity‡,†					
Non-Hispanic (n=130)	87.3	90.9	78.5	**79.2**	90.8
Hispanic (n=13)	12.5	9.1	100.0	**100.0**	100.0
Maternal Age‡,†					
<25 years old (n=62)	39.2	43.4	74.2	**75.8**	88.7
25-34 years old (n=70)	47.8	49.0	84.3	**84.3**	92.9
35+ years old (n=11)	12.8	7.7	90.9	**90.9**	100.0
Maternal Education‡,†					
Some college or higher (n=60)	46.5	42.0	81.7	**83.3**	95.0
High school graduate/GED (n=56)	31.6	39.2	83.9	**83.9**	91.1
9th - 11th grade (n=16)	13.9	11.2	62.5	**62.5**	75.0
<9th grade (n=5)	4.0	3.5	80.0	**80.0**	100.0
Maternal Marital Status‡					
Married (n=82)	47.4	57.3	81.7	**82.9**	91.5
Unmarried (n=60)	51.0	42.0	78.3	**78.3**	91.7
WIC$^{\theta}$					
Non-WIC (n=65)	43.2	45.5	83.1	**84.6**	93.8
WIC (n=78)	56.8	54.5	78.2	**78.2**	89.7
Number of Providers†,$^{\theta}$					
One (n=21)	20.6	14.7	71.4	**71.4**	85.7
Two (n=80)	47.9	55.9	83.8	**83.8**	91.3
Three or more (n=36)	26.4	25.2	80.6	**83.3**	97.2
Provider Type†,$^{\theta}$					
Public sector only (n=3)	1.6	2.1	100.0	**100.0**	100.0
Private sector only (n=45)	38.9	31.5	77.8	**77.8**	88.9
Both private and public sector (n=89)	54.4	62.2	82.0	**83.1**	93.3

Θ Please refer to Appendix B for detailed information about the collection of information for this variable.

† Indicates that the percentages for this variable may not add up to 100.0% because the information was missing in some cases.

‡ Indicates that this variable corresponds to the data collected at the time of delivery.

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Demographic Findings
Because of the small sample size and inherent limitations of the data (Methods, page 11), no statistically significant differences in the UTD by 24 months immunization rates were found within the demographic groups in District 1-1 (Table 1-1-C).

Immunization Administration
Of the 2,692 vaccines doses given to the District 1-1 cohort, 8.1% were given by public providers and 1.9% were given by private providers (Figure 1-1-B).

Figure 1-1-B: Immunizations Administered: Private vs. Public Sector, District 1-1, 2015 (n= 2,692)

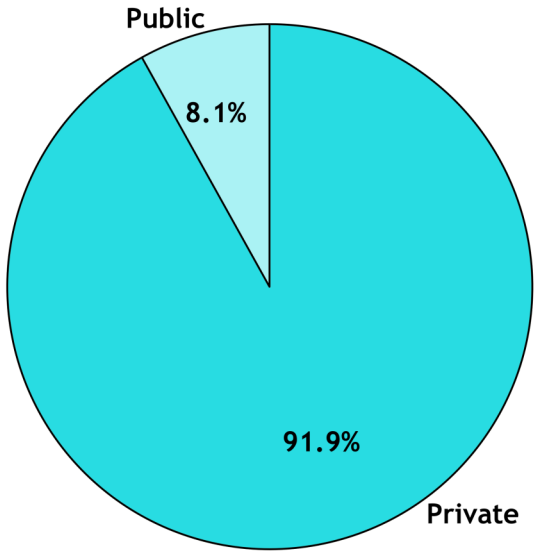


Table 1-1-D: Vaccine Antigen-Specific Immunization Coverage (%) by 24 months of age, District 1-1, 2011-2015

Vaccine Antigen	2011-2015	2011	2012	2013	2014	2015
4 DTaP by 24 months		88.3%	95.3%	85.6%	84.1%	82.5%
3 Polio by 24 months		96.8%	97.6%	97.8%	95.2%	93.7%
1 MMR by 24 months		92.6%	96.9%	93.3%	92.4%	88.8%
UTD Hib by 24 months		95.7%	98.4%	94.4%	92.4%	93.0%
3 Hepatitis B by 24 months		96.8%	97.6%	96.7%	95.2%	95.1%
1 Varicella by 24 months		92.6%	98.4%	94.4%	92.4%	89.5%
UTD PCV by 24 months		95.7%	96.9%	87.8%	91.7%	89.5%
2 Rotavirus by 24 months		87.2%	78.7%	91.1%	86.2%	92.3%
1 Influenza by 24 months		70.2%	64.6%	32.2%	58.6%	64.3%
2 Hepatitis A by 24 months		58.5%	63.0%	63.3%	55.9%	53.8%
Hepatitis B birth dose		88.3%	85.8%	80.0%	88.3%	83.9%

Immunization Rates by Vaccine Antigen
In District 1-1, the UTD immunization rate by 24 months for most vaccine antigens decreased (shown in red) in 2015 when compared to 2014 (Table 1-1-D).

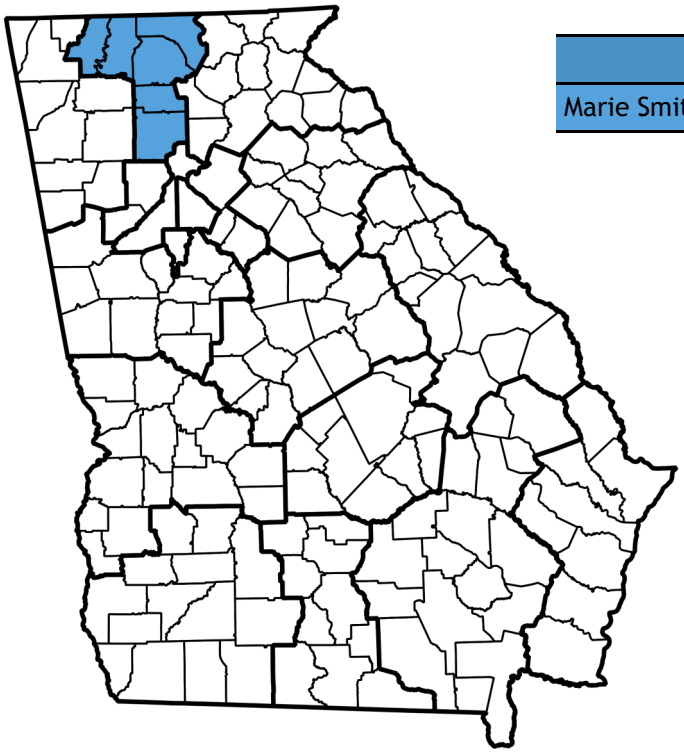
The UTD immunization rate by antigen for most of the 4:3:1:3:3:1:4 series vaccines decreased slightly (less than 5 percentage point difference) from 2014 to 2015, with the exemption of HiB, which increased slightly.

Notable differences in UTD rate by antigen included Rotavirus and Influenza, which each increased by more than 5 percentage points from 2014 to 2015.

Vaccine Antigen-Specific Conclusions
Antigen-specific data suggest that the fourth dose of DTaP, MMR and PCV vaccines could be the primary focus of District 1-1 and County-level immunization campaigns.

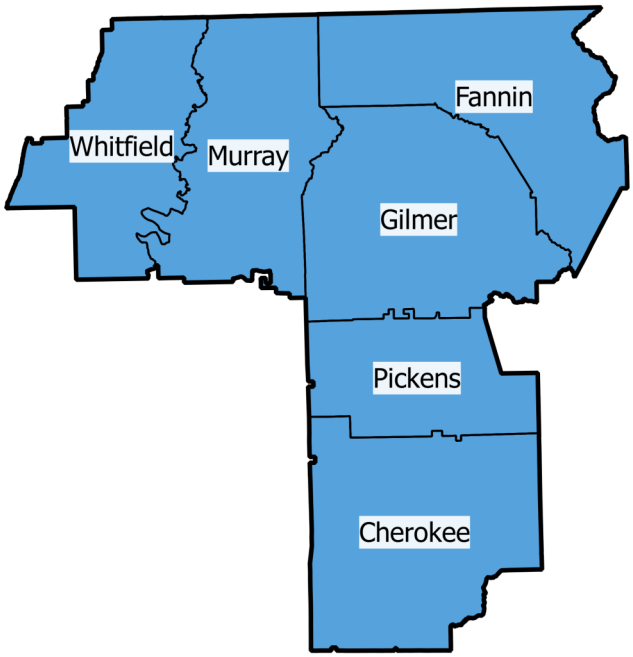
District 1-2

2015 Georgia Immunization Study Report



District 1-2 Data Collection Team	
Marie Smith, RN, BSN	District Immunization Coordinator

County	Number in Final Sample
Cherokee	61
Fannin	5
Gilmer	8
Murray	11
Pickens	3
Whitfield	30
District 1-2	**118**
District UTD by 24 months Immunization Rate	**75.4%**
State of Georgia	**2,002**
State UTD by 24 months Immunization Rate	**82.7%**



District 1-2

Georgia Immunization Study Report, p2

The 2015 GIS sampled a total of 118 children in District 1-2 (Table 1-2-A).

For the District 1-2 sample, the up-to-date (UTD) immunization rate by 24 months of age (75.4%) was 2.9 percentage points lower than in 2014 (78.4%). The UTD immunization rate based on GRITS alone (74.6%) increased 0.4 percentage points from 2014 (74.2%). The UTD immunization rate by the end of data collection (89.8%) was 2.0 percentage points lower than in 2014 (91.8%). Immunization rates that decreased are shown in red (Table 1-2-B).

A comparison of GIS immunization rates between District 1-2 and Georgia for the 4:3:1:3:3:1:4 series, from 2005 to 2015, is shown in Figure 1-2-A.

Table 1-2-A: GIS Sampling Scheme, District 1-2, 2015

	District 1-2 (n)	State (n)
Original Sample	132	2,225
Ineligible	11	159
(Refused to Participate)	3	15
Eligible Sample	121	2,066
Unable to Locate†	3	64
Final Sample	118	2,002
Response Rate (%)	97.5	96.9

† Children were classified as "Unable to Locate" if every conceivable effort was made to locate and communicate with the child's guardian and the child's provider was either unknown or also unable to locate the guardian.

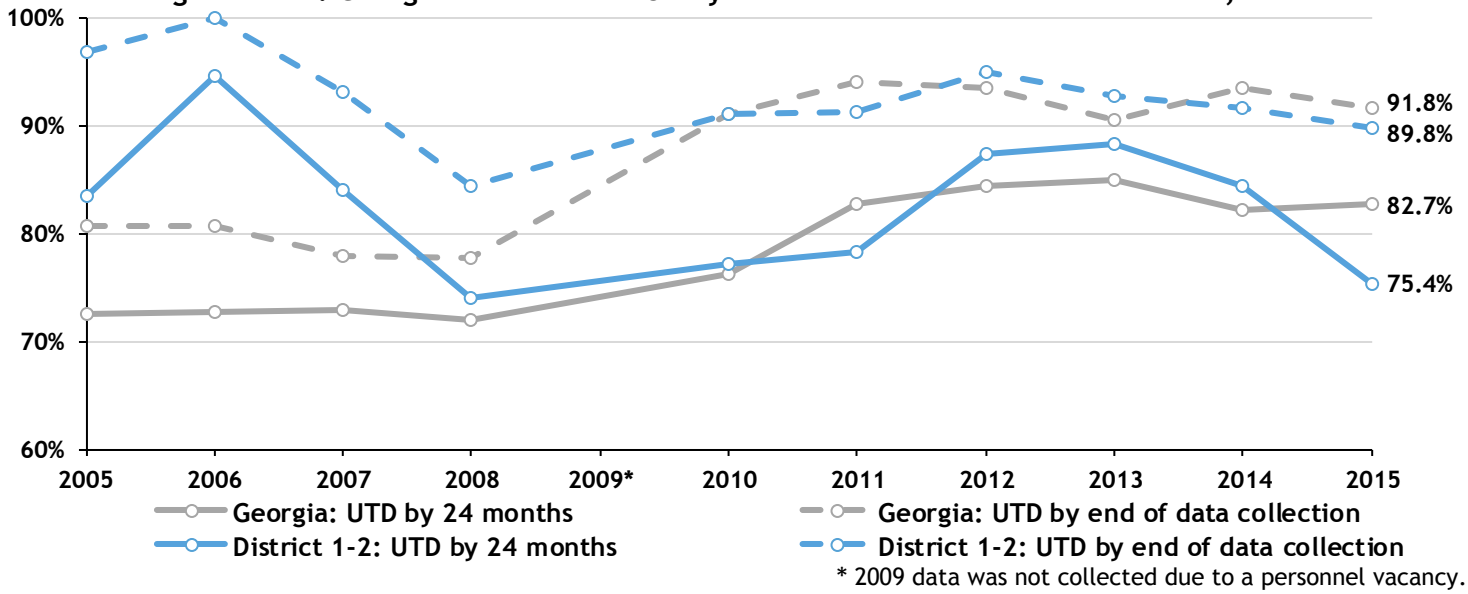
Table 1-2-B: Immunization Summary by Series & Vaccine Antigen, District 1-2, 2015

	District 1-2 (%)	State (%)
UTD immunization rate* **based on GRITS alone**	74.6 ± 7.9	79.7 ± 1.8
UTD immunization rate* **by 24 months**	75.4 ± 7.8	82.7 ± 1.7
UTD immunization rate* **by end of six-month data collection†**	89.8 ± 5.5	91.8 ± 1.2
4 DTaP **by 24 months**	79.7 ± 7.3	84.7 ± 1.6
3 DTaP **by 24 months**	94.1 ± 4.3	95.6 ± 0.9
3 IPV **by 24 months**	91.5 ± 5.0	94.9 ± 1.0
1 MMR **by 24 months**	89.0 ± 5.7	91.2 ± 1.2
UTD Hib **by 24 months**	91.5 ± 5.0	93.9 ± 1.1
3 Hep B **by 24 months**	92.4 ± 4.8	95.9 ± 0.9
1 Varicella **by 24 months**	89.8 ± 5.5	92.0 ± 1.2
UTD PCV **by 24 months**	90.7 ± 5.3	91.1 ± 1.3
2 Rotavirus **by 24 months**	83.9 ± 6.7	87.0 ± 1.5
2 Hep A **by 24 months**	61.9 ± 8.8	58.8 ± 2.2
1+ Influenza **by 24 months**	61.0 ± 8.8	62.1 ± 2.1

† Includes children who become UTD during the data collection period. This number is a testament to the efforts of District staff to reach the children originally listed as pending in their District.

* This rate includes children up-to-date by ACIP-recommended catch-up schedule.

Figure 1-2-A: Georgia Immunization Study and District 1-2 Immunization Rates, 2005-2015



* 2009 data was not collected due to a personnel vacancy.

District 1-2, Georgia Immunization Study Report, p3

Table 1-2-C: District 1-2 Sample Demographics & Immunization Rates, 2015

	Demographics for State and District 1-2 samples		Immunization Rates for District 1-2 Sample		
	Sample of Jan. 2013 births n=2,002 (%)	District 1-2 sample n=118 (%)	UTD based on GRITS alone (%)	UTD by 24 months (%)	UTD by end of data collection (%)
District 1-2 Rates			74.6	**75.4**	89.8
Maternal Race‡,†					
White (n=79)	49.2	66.9	74.7	**75.9**	87.3
Black or African-American (n=4)	34.9	3.4	75.0	**75.0**	100.0
Asian (n=1)	2.9	0.8	100.0	**100.0**	100.0
Multiracial (n=4)	3.6	3.4	100.0	**100.0**	100.0
Maternal Ethnicity‡,†					
Non-Hispanic (n=92)	87.3	78.0	75.0	**76.1**	89.1
Hispanic (n=26)	12.5	22.0	73.1	**73.1**	92.3
Maternal Age‡,†					
<25 years old (n=37)	39.2	31.4	73.0	**73.0**	91.9
25-34 years old (n=64)	47.8	54.2	73.4	**75.0**	85.9
35+ years old (n=17)	12.8	14.4	82.4	**82.4**	100.0
Maternal Education‡,†					
Some college or higher (n=58)	46.5	49.2	74.1	**74.1**	86.2
High school graduate/GED (n=25)	31.6	21.2	68.0	**72.0**	88.0
9th - 11th grade (n=20)	13.9	16.9	80.0	**80.0**	95.0
<9th grade (n=11)	4.0	9.3	81.8	**81.8**	100.0
Maternal Marital Status‡					
Married (n=81)	47.4	68.6	76.5	**76.5**	87.7
Unmarried (n=34)	51.0	28.8	70.6	**73.5**	94.1
WIC$^{\theta}$					
Non-WIC (n=54)	43.2	45.8	75.9	**77.8**	88.9
WIC (n=64)	56.8	54.2	73.4	**73.4**	90.6
Number of Providers†,$^{\theta}$					
One (n=33)	20.6	28.0	60.6	**63.6**	81.8
Two (n=63)	47.9	53.4	82.5	**82.5**	92.1
Three or more (n=16)	26.4	13.6	87.5	**87.5**	100.0
Provider Type†,$^{\theta}$					
Public sector only (n=1)	1.6	0.8	-	**100.0**	100.0
Private sector only (n=48)	38.9	40.7	64.6	**64.6**	83.3
Both private and public sector (n=63)	54.4	53.4	87.3	**87.3**	95.2

Θ Please refer to Appendix B for detailed information about the collection of information for this variable.

† Indicates that the percentages for this variable may not add up to 100.0% because the information was missing in some cases.

‡ Indicates that this variable corresponds to the data collected at the time of delivery.

Demographic Findings
In spite of the small sample size and inherent limitations of the data (Methods, page 11), the District 1-2 results suggest that the following groups were the least often up-to-date on their immunizations by 24 months of age:

- Children receiving immunizations from only private providers

Immunization Administration
Of the 2,303 vaccines doses given to the District 1-2 cohort, 5.2% were given by public providers and 4.8% were given by private providers (Figure 1-2-B).

Figure 1-2-B: Immunizations Administered: Private vs. Public Sector, District 1-2, 2015 (n= 2,303)

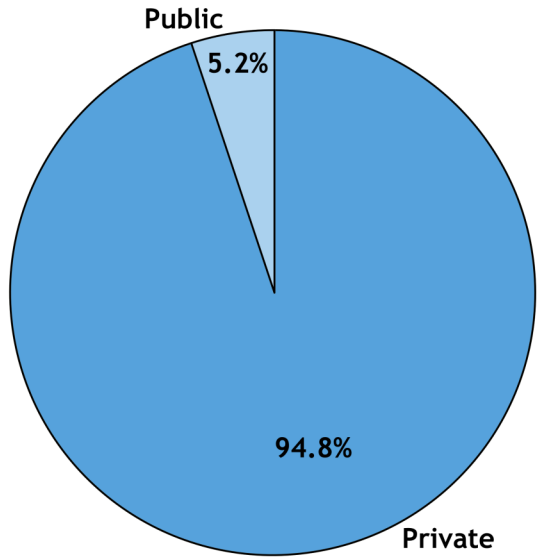


Table 1-2-D: Vaccine Antigen-Specific Immunization Coverage (%) by 24 months of age, District 1-2, 2011-2015

Vaccine Antigen	2011 - 2015	2011	2012	2013	2014	2015
4 DTaP by 24 months		81.7%	90.2%	87.4%	82.5%	79.7%
3 Polio by 24 months		93.9%	97.9%	94.6%	97.9%	91.5%
1 MMR by 24 months		90.4%	95.8%	94.6%	91.8%	89.0%
UTD Hib by 24 months		91.3%	97.9%	97.3%	97.9%	91.5%
3 Hepatitis B by 24 months		95.7%	98.6%	96.4%	95.9%	92.4%
1 Varicella by 24 months		93.0%	97.9%	95.5%	92.8%	89.8%
UTD PCV by 24 months		93.0%	93.0%	90.1%	90.7%	90.7%
2 Rotavirus by 24 months		82.6%	69.9%	88.3%	90.7%	83.9%
1 Influenza by 24 months		60.0%	71.3%	76.0%	75.3%	61.0%
2 Hepatitis A by 24 months		53.0%	59.4%	55.0%	55.7%	61.9%
Hepatitis B birth dose		66.1%	76.9%	79.3%	86.6%	72.9%

Immunization Rates by Vaccine Antigen
In District 1-2, the UTD immunization rates by 24 months for most vaccine antigens decreased (shown in red) between 2014 and 2015 (Table 1-2-D).

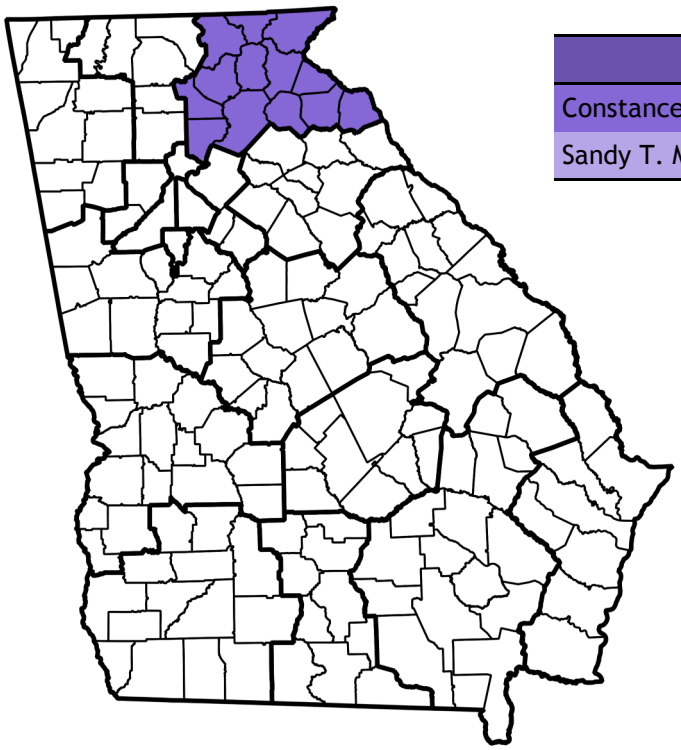
The biggest differences in UTD rate by antigen for the 4:3:1:3:3:1:4 series vaccines were observed among the Polio and HiB vaccines, which decreased by more than 5 percentage points from 2014 to 2015.

Other notable differences in UTD rate by antigen included Hepatitis A, which increased by more than 5 percentage points, and Rotavirus, Influenza & the Hepatitis B birth dose, which decreased by more than 5 percentage points from 2014 to 2015.

Vaccine Antigen-Specific Conclusions
Antigen-specific data suggest that the DTaP, MMR, Varicella and PCV vaccines could reasonably be the primary focus of District 1-2 and County-level immunization campaigns.

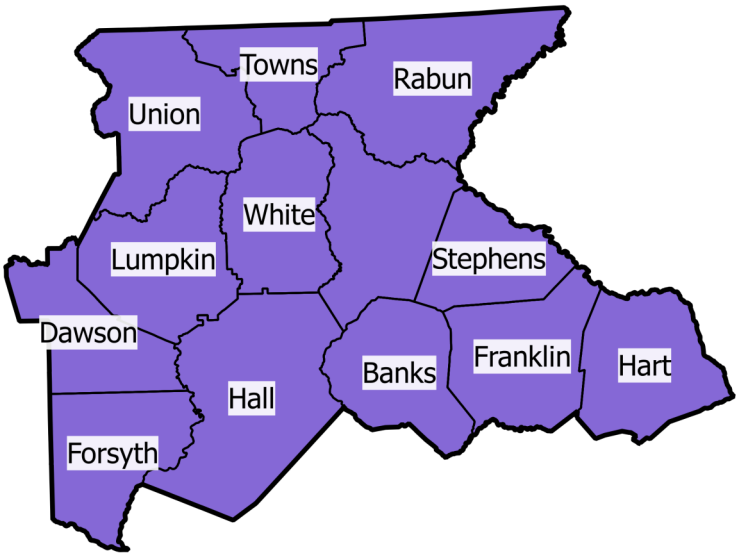
District 2-0

2015 Georgia Immunization Study Report



District 2-0 Data Collection Team	
Constance Martin RN, BSN	District Immunization Coordinator
Sandy T. Moore, LPN	Primary Data Collector

County	Number in Final Sample
Banks	4
Dawson	5
Forsyth	26
Franklin	4
Habersham	9
Hall	41
Hart	3
Lumpkin	3
Rabun	5
Stephens	8
Towns	2
Union	6
White	6
District 2-0	122
District UTD by 24 months Immunization Rate	**87.2%**
State of Georgia	**2,002**
State UTD by 24 months Immunization Rate	**82.7%**



District 2-0

Georgia Immunization Study Report, p2

The 2015 GIS sampled a total of 122 children in District 2-0 (Table 2-0-A).

For the District 2-0 sample, the up-to-date (UTD) immunization rate by 24 months of age (78.7%) was 2.1 percentage points lower than in 2014 (80.8%). The UTD immunization rate based on GRITS alone (73.0%) decreased 0.1 percentage points from 2014 (73.1%). The UTD immunization rate by the end of data collection (89.3%) was 1.5 percentage points lower than in 2014 (90.8%). Immunization rates that decreased are shown in red (Table 2-0-B).

A comparison of GIS immunization rates between District 2-0 and Georgia for the 4:3:1:3:3:1:4 series, from 2005 to 2015, is shown in Figure 2-0-A.

Table 2-0-A: GIS Sampling Scheme, District 2-0, 2015

	District 2-0 (n)	State (n)
Original Sample	140	2,225
Ineligible	18	159
(Refused to Participate)	2	15
Eligible Sample	122	2,066
Unable to Locate†	0	64
Final Sample	122	2,002
Response Rate (%)	97.1	96.9

† Children were classified as "Unable to Locate" if every conceivable effort was made to locate and communicate with the child's guardian and the child's provider was either unknown or also unable to locate the guardian.

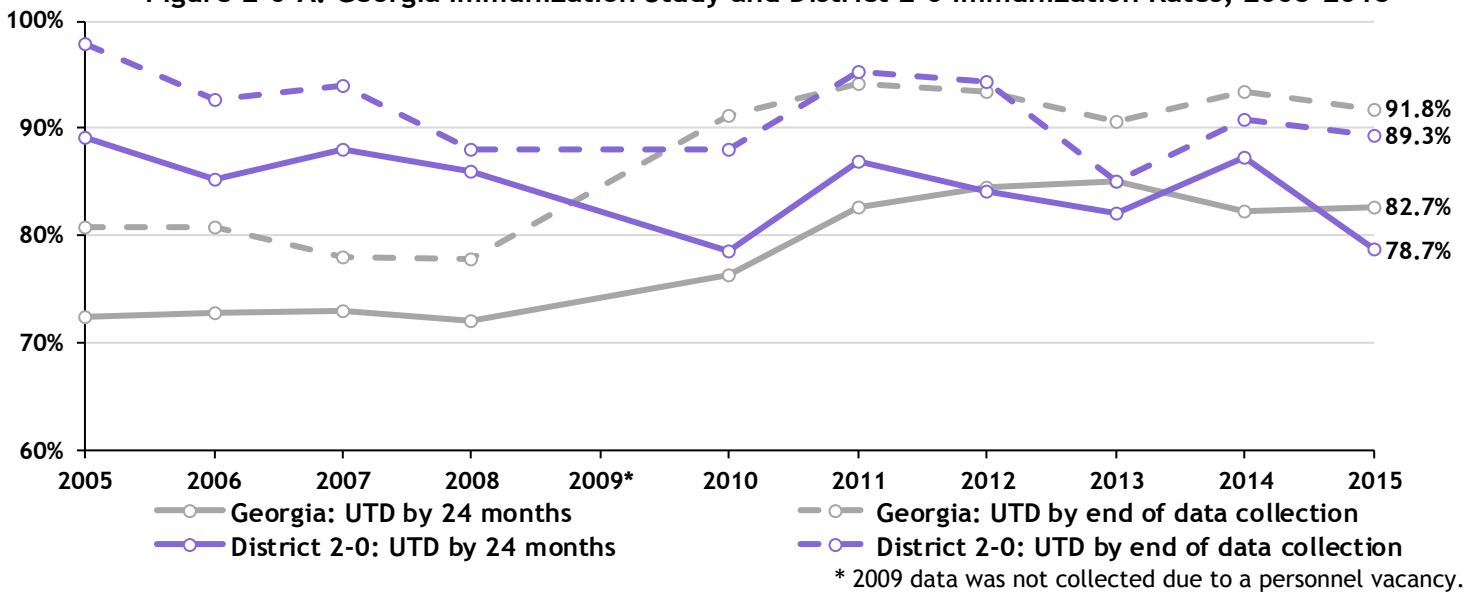
Table 2-0-B: Immunization Summary by Series & Vaccine Antigen, District 2-0, 2015

	District 2-0 (%)	State (%)
UTD immunization rate* **based on GRITS alone**	73.0 ± 7.9	79.7 ± 1.8
UTD immunization rate* **by 24 months**	78.7 ± 7.3	82.7 ± 1.7
UTD immunization rate* **by end of six-month data collection†**	89.3 ± 5.5	91.8 ± 1.2
4 DTaP **by 24 months**	82.8 ± 6.7	84.7 ± 1.6
3 DTaP **by 24 months**	95.1 ± 3.9	95.6 ± 0.9
3 IPV **by 24 months**	94.3 ± 4.1	94.9 ± 1.0
1 MMR **by 24 months**	86.9 ± 6.0	91.2 ± 1.2
UTD Hib **by 24 months**	93.4 ± 4.4	93.9 ± 1.1
3 Hep B **by 24 months**	93.4 ± 4.4	95.9 ± 0.9
1 Varicella **by 24 months**	89.3 ± 5.5	92.0 ± 1.2
UTD PCV **by 24 months**	89.3 ± 5.5	91.1 ± 1.3
2 Rotavirus **by 24 months**	85.2 ± 6.3	87.0 ± 1.5
2 Hep A **by 24 months**	54.9 ± 8.9	58.8 ± 2.2
1+ Influenza **by 24 months**	63.9 ± 8.6	62.1 ± 2.1

† Includes children who become UTD during the data collection period. This number is a testament to the efforts of District staff to reach the children originally listed as pending in their District.

* This rate includes children up-to-date by ACIP-recommended catch-up schedule.

Figure 2-0-A: Georgia Immunization Study and District 2-0 Immunization Rates, 2005-2015



* 2009 data was not collected due to a personnel vacancy.

District 2-0, Georgia Immunization Study Report, p3

Table 2-0-C: District 2-0 Sample Demographics & Immunization Rates, 2015

	Demographics for State and District 2-0 samples		Immunization Rates for District 2-0 Sample		
	Sample of Jan. 2013 births n=2,002 (%)	District 2-0 sample n=122 (%)	UTD based on GRITS alone (%)	UTD by 24 months (%)	UTD by end of data collection (%)
District 2-0 Rates			80.4	**81.1**	91.6
Maternal Race‡,†					
White (n=105)	49.2	86.1	74.3	**79.0**	88.6
Black or African-American (n=4)	34.9	3.3	75.0	**75.0**	100.0
Asian (n=1)	2.9	0.8	100.0	**100.0**	100.0
Multiracial (n=6)	3.6	4.9	33.3	**66.7**	83.3
Maternal Ethnicity‡,†					
Non-Hispanic (n=96)	87.3	78.7	72.9	**78.1**	87.5
Hispanic (n=26)	12.5	21.3	73.1	**80.8**	96.2
Maternal Age‡,†					
<25 years old (n=52)	39.2	42.6	65.4	**71.2**	92.3
25-34 years old (n=58)	47.8	47.5	77.6	**82.8**	86.2
35+ years old (n=12)	12.8	9.8	83.3	**91.7**	91.7
Maternal Education‡,†					
Some college or higher (n=52)	46.5	42.6	73.1	**82.7**	86.5
High school graduate/GED (n=45)	31.6	36.9	68.9	**73.3**	93.3
9th - 11th grade (n=16)	13.9	13.1	75.0	**75.0**	87.5
<9th grade (n=4)	4.0	3.3	100.0	**100.0**	100.0
Maternal Marital Status‡					
Married (n=72)	47.4	59.0	76.4	**81.9**	86.1
Unmarried (n=47)	51.0	38.5	66.0	**72.3**	93.6
WIC$^{\theta}$					
Non-WIC (n=50)	43.2	41.0	66.0	**74.0**	86.0
WIC (n=72)	56.8	59.0	77.8	**81.9**	91.7
Number of Providers†,$^{\theta}$					
One (n=37)	20.6	30.3	86.5	**89.2**	89.2
Two (n=53)	47.9	43.4	79.2	**84.9**	94.3
Three or more (n=21)	26.4	17.2	52.4	**66.7**	95.2
Provider Type†,$^{\theta}$					
Public sector only (n=0)	-	-	-	**-**	-
Private sector only (n=63)	38.9	51.6	77.8	**81.0**	88.9
Both private and public sector (n=48)	54.4	39.3	75.0	**85.4**	97.9

Θ Please refer to Appendix B for detailed information about the collection of information for this variable.

† Indicates that the percentages for this variable may not add up to 100.0% because the information was missing in some cases.

‡ Indicates that this variable corresponds to the data collected at the time of delivery.

District 2-0, Georgia Immunization Study Report, p4

Demographic Findings
Because of the small sample size and inherent limitations of the data (Methods, page 11), no statistically significant differences in the UTD by 24 months immunization rates were found within the demographic groups in District 2-0 (Table 2-0-C).

Immunization Administration
Of the 2,274 vaccines doses given to the District 2-0 cohort, 3.5% were given by public providers and 96.5% were given by private providers (Figure 2-0-B).

Figure 2-0-B: Immunizations Administered: Private vs. Public Sector, District 2-0, 2015 (n= 2,274)

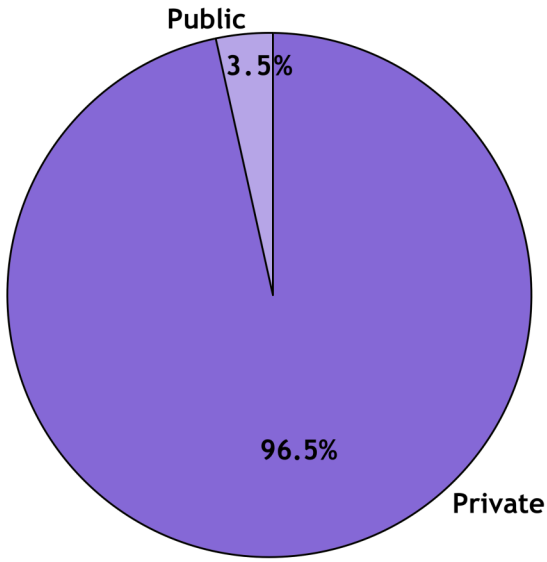


Table 2-0-D: Vaccine Antigen-Specific Immunization Coverage (%) by 24 months of age, District 2-0, 2010-2015

Vaccine Antigen	2011 - 2015	2011	2012	2013	2014	2015
4 DTaP by 24 months		90.3%	86.5%	87.1%	85.1%	82.8%
3 Polio by 24 months		97.9%	96.8%	94.3%	95.0%	94.3%
1 MMR by 24 months		94.5%	96.0%	91.4%	90.1%	86.9%
UTD Hib by 24 months		97.2%	96.8%	95.0%	96.5%	93.4%
3 Hepatitis B by 24 months		97.9%	93.5%	91.4%	93.6%	93.4%
1 Varicella by 24 months		95.2%	95.2%	90.7%	92.9%	89.3%
UTD PCV by 24 months		97.2%	90.5%	87.1%	92.9%	89.3%
2 Rotavirus by 24 months		92.4%	89.7%	87.9%	90.1%	85.2%
1 Influenza by 24 months		66.2%	69.1%	41.4%	64.5%	63.9%
2 Hepatitis A by 24 months		56.6%	51.6%	62.1%	63.1%	54.9%
Hepatitis B birth dose		83.4%	69.8%	78.6%	83.0%	68.0%

Immunization Rates by Vaccine Antigen
In District 2-0, the UTD immunization rates for all vaccine antigens decreased (labeled in red) from 2014 to 2015 (Table 2-0-D).

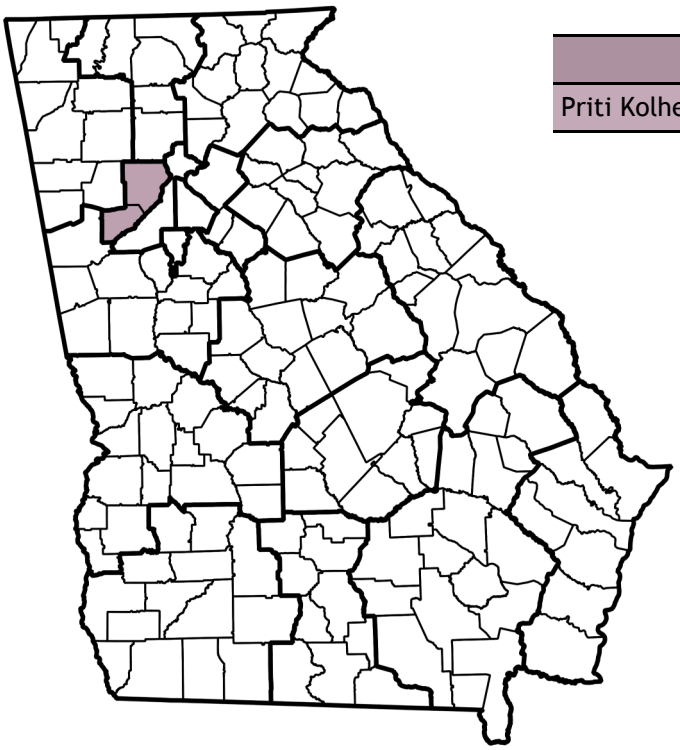
The UTD immunization rate by antigen for all of the 4:3:1:3:3:1:4 series vaccines decreased slightly (less than 5 percentage point difference) from 2014 to 2015.

Notable differences in UTD rate by antigen included Hepatitis A and the Hepatitis B birth dose, which each decreased by more than 5 percentage points from 2014 to 2015.

Vaccine Antigen-Specific Conclusions
The antigen-specific data suggest that the DTaP and PCV vaccine should be the primary focus of District 2-0 and County-level immunization campaigns.

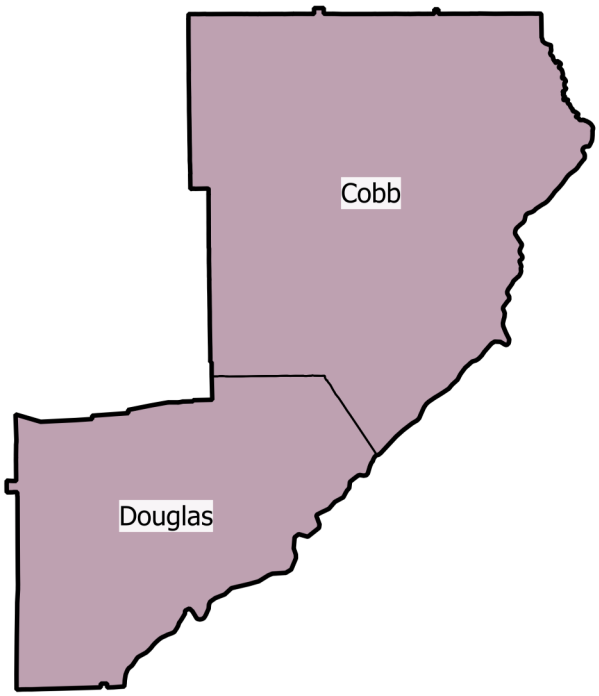
District 3-1

2015 Georgia Immunization Study Report



District 3-1 Data Collection Team	
Priti Kolhe	District Immunization Coordinator

County	Number in Final Sample
Cobb	76
Douglas	17
District 3-1	**93**
District UTD by 24 months Immunization Rate	**81.7%**
State of Georgia	**2,002**
State UTD by 24 months Immunization Rate	**82.7%**



District 3-1

Georgia Immunization Study Report, p2

The 2015 GIS sampled a total of 93 children in District 3-1 (Table 3-1-A).

For the District 3-1 sample, the up-to-date (UTD) immunization rate by 24 months of age (81.7%) was 5.1 percentage points lower than in 2014 (86.8%). The UTD immunization rate based on GRITS alone (78.5%) decreased 4.1 percentage points from 2014 (82.6%). The UTD immunization rate by the end of data collection (90.3%) was 7.3 percentage points lower than in 2014 (97.6%). Immunization rates that decreased are shown in red (Table 3-1-B).

A comparison of GIS immunization rates between District 3-1 and Georgia for the 4:3:1:3:3:1:4 series, from 2005 to 2015, is shown in Figure 3-1-A.

Table 3-1-A: GIS Sampling Scheme, District 3-1, 2015

	District 3-1 (n)	State (n)
Original Sample	110	2,225
Ineligible	17	159
(Refused to Participate)	1	15
Eligible Sample	93	2,066
Unable to Locate†	0	64
Final Sample	93	2,002
Response Rate (%)	100.0	96.9

† Children were classified as "Unable to Locate" if every conceivable effort was made to locate and communicate with the child's guardian and the child's provider was either unknown or also unable to locate the guardian.

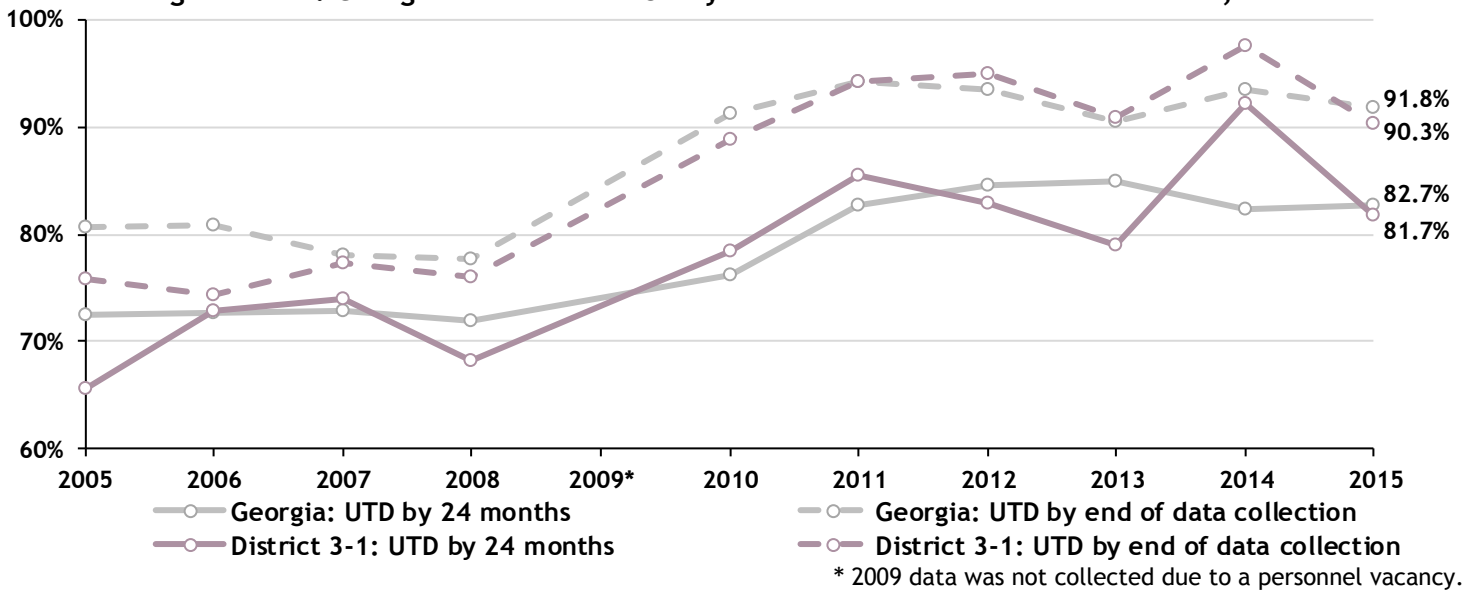
Table 3-1-B: Immunization Summary by Series & Vaccine Antigen, District 3-1, 2015

	District 3-1 (%)	State (%)
UTD immunization rate* **based on GRITS alone**	78.5 ± 8.4	79.7 ± 1.8
UTD immunization rate* **by 24 months**	81.7 ± 7.9	82.7 ± 1.7
UTD immunization rate* **by end of six-month data collection†**	90.3 ± 6.0	91.8 ± 1.2
4 DTaP **by 24 months**	81.7 ± 7.9	84.7 ± 1.6
3 DTaP **by 24 months**	95.7 ± 4.1	95.6 ± 0.9
3 IPV **by 24 months**	94.6 ± 4.6	94.9 ± 1.0
1 MMR **by 24 months**	96.8 ± 3.6	91.2 ± 1.2
UTD Hib **by 24 months**	94.6 ± 4.6	93.9 ± 1.1
3 Hep B **by 24 months**	96.8 ± 3.6	95.9 ± 0.9
1 Varicella **by 24 months**	96.8 ± 3.6	92.0 ± 1.2
UTD PCV **by 24 months**	95.7 ± 4.1	91.1 ± 1.3
2 Rotavirus **by 24 months**	87.1 ± 6.9	87.0 ± 1.5
2 Hep A **by 24 months**	55.9 ± 10	58.8 ± 2.2
1+ Influenza **by 24 months**	54.8 ± 10	62.1 ± 2.1

† Includes children who become UTD during the data collection period. This number is a testament to the efforts of District staff to reach the children originally listed as pending in their District.

* This rate includes children up-to-date by ACIP-recommended catch-up schedule.

Figure 3-1-A: Georgia Immunization Study and District 3-1 Immunization Rates, 2005-2015



* 2009 data was not collected due to a personnel vacancy.

District 3-1, Georgia Immunization Study Report, p3

Table 3-1-C: District 3-1 Sample Demographics & Immunization Rates, 2015

	Demographics for State and District 3-1 samples		Immunization Rates for District 3-1 Sample		
	Sample of Jan. 2013 births n=2,002 (%)	District 3-1 sample n=93 (%)	UTD based on GRITS alone (%)	UTD by 24 months (%)	UTD by end of data collection (%)
District 3-1 Rates			78.5	**81.7**	90.3
Maternal Race‡,†					
White (n=44)	49.2	47.3	84.1	**86.4**	93.2
Black or African-American (n=26)	34.9	28.0	73.1	**73.1**	84.6
Asian (n=4)	2.9	4.3	100.0	**100.0**	100.0
Multiracial (n=5)	3.6	5.4	80.0	**80.0**	80.0
Maternal Ethnicity‡,†					
Non-Hispanic (n=74)	87.3	79.6	79.7	**81.1**	89.2
Hispanic (n=18)	12.5	19.4	72.2	**83.3**	94.4
Maternal Age‡,†					
<25 years old (n=23)	39.2	24.7	60.9	**65.2**	73.9
25-34 years old (n=53)	47.8	57.0	84.9	**86.8**	96.2
35+ years old (n=16)	12.8	17.2	81.3	**87.5**	93.8
Maternal Education‡,†					
Some college or higher (n=46)	46.5	49.5	84.8	**87.0**	95.7
High school graduate/GED (n=26)	31.6	28.0	76.9	**80.8**	92.3
9th - 11th grade (n=6)	13.9	6.5	66.7	**66.7**	66.7
<9th grade (n=7)	4.0	7.5	57.1	**71.4**	85.7
Maternal Marital Status‡					
Married (n=54)	47.4	58.1	79.6	**83.3**	90.7
Unmarried (n=37)	51.0	39.8	78.4	**81.1**	91.9
WIC$^{\theta}$					
Non-WIC (n=59)	43.2	63.4	81.4	**83.1**	93.2
WIC (n=34)	56.8	36.6	73.5	**79.4**	85.3
Number of Providers†,$^{\theta}$					
One (n=20)	20.6	21.5	60.0	**65.0**	80.0
Two (n=37)	47.9	39.8	86.5	**89.2**	94.6
Three or more (n=32)	26.4	34.4	81.3	**84.4**	90.6
Provider Type†,$^{\theta}$					
Public sector only (n=1)	1.6	1.1	100.0	**100.0**	100.0
Private sector only (n=38)	38.9	40.9	73.7	**76.3**	89.5
Both private and public sector (n=50)	54.4	53.8	82.0	**86.0**	90.0

Θ Please refer to Appendix B for detailed information about the collection of information for this variable.

† Indicates that the percentages for this variable may not add up to 100.0% because the information was missing in some cases.

‡ Indicates that this variable corresponds to the data collected at the time of delivery.

Demographic Findings
Because of the small sample size and inherent limitations of the data (Methods, page 11), no statistically significant differences in the UTD by 24 months immunization rates were found within the demographic groups in District 3-1 (Table 3-1-C).

Immunization Administration
Of the 1,813 vaccines doses given to the District 3-1 cohort, 5.9% were given by public providers and 94.1% were given by private providers (Figure 3-1-B).

Figure 3-1-B: Immunizations Administered: Private vs. Public Sector, District 3-1, 2015 (n= 1,813)

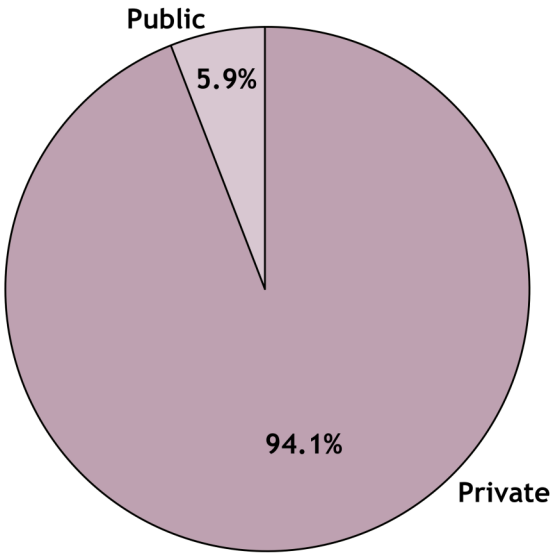


Table 3-1-D: Vaccine Antigen-Specific Immunization Coverage (%) by 24 months of age, District 3-1, 2010-2015

Vaccine Antigen	2011 - 2015	2011	2012	2013	2014	2015
4 DTaP by 24 months		89.7%	85.7%	79.5%	88.6%	81.7%
3 Polio by 24 months		98.3%	94.3%	95.5%	98.2%	94.6%
1 MMR by 24 months		94.8%	90.7%	93.2%	95.2%	96.8%
UTD Hib by 24 months		97.7%	93.6%	95.5%	98.2%	94.6%
3 Hepatitis B by 24 months		96.6%	95.0%	96.0%	97.0%	96.8%
1 Varicella by 24 months		95.4%	91.4%	92.6%	94.6%	96.8%
UTD PCV by 24 months		98.3%	92.1%	81.3%	94.0%	95.7%
2 Rotavirus by 24 months		87.4%	75.7%	86.4%	92.2%	87.1%
1 Influenza by 24 months		74.7%	60.0%	38.1%	69.5%	54.8%
2 Hepatitis A by 24 months		48.3%	52.9%	50.6%	55.7%	55.9%
Hepatitis B birth dose		82.8%	70.0%	72.7%	80.2%	77.4%

Immunization Rates by Vaccine Antigen
In District 3-1, the UTD immunization rates by 24 months for most vaccine antigens decreased (labeled in red) between 2014 and 2015 (Table 3-1-D).

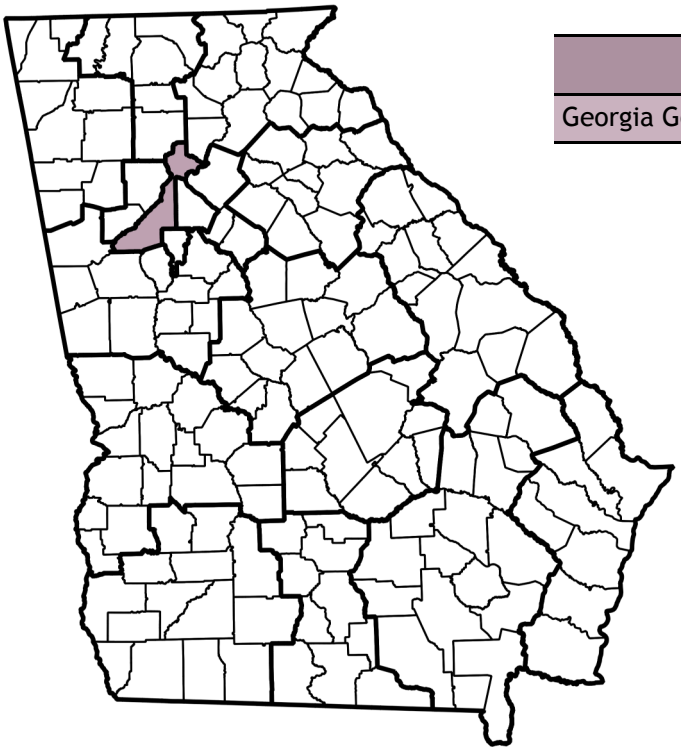
The biggest difference in UTD rates by antigen for the 4:3:1:3:3:1:4 series vaccines was observed in the 4th DTaP dose, which decreased by more than 5 percentage points from 2014 to 2015.

Other notable differences in UTD rate by antigen included Rotavirus and Influenza, which each decreased by more than 5 percentage points from 2014 to 2015.

Vaccine Antigen-Specific Conclusions
Antigen-specific data suggest that the 4th DTaP vaccine dose could be the primary focus of District 3-1 and County-level immunization campaigns.

District 3-2

2015 Georgia Immunization Study Report



District 3-2 Data Collection Team	
Georgia Goseer, RN	District Immunization Coordinator

County	Number in Final Sample
Fulton	108
District 3-2	**108**
District UTD by 24 months Immunization Rate	**84.3%**
State of Georgia	**2,002**
State UTD by 24 months Immunization Rate	**82.7%**

District 3-2

Georgia Immunization Study Report, p2

The 2015 GIS sampled a total of 108 children in District 3-2 (Table 3-2-A).

For the District 3-2 sample, the up-to-date (UTD) immunization rate by 24 months of age (84.3%) was 1.3 percentage points lower than in 2014 (85.6%). The UTD immunization rate based on GRITS alone (83.3%) decreased 0.5 percentage points from 2014 (83.8%). The UTD immunization rate by the end of data collection (90.7%) was 3.7 percentage points lower than in 2014 (94.4%). Immunization rates that decreased are shown in red (Table 3-2-B).

A comparison of GIS immunization rates between District 3-2 and Georgia for the 4:3:1:3:3:1:4 series, from 2005 to 2015, is shown in Figure 3-2-A.

Table 3-2-A: GIS Sampling Scheme, District 3-2, 2015

	District 3-2 (n)	State (n)
Original Sample	120	2,225
Ineligible	7	159
(Refused to Participate)	1	15
Eligible Sample	113	2,066
Unable to Locate†	5	64
Final Sample	108	2,002
Response Rate (%)	95.6	96.9

† Children were classified as "Unable to Locate" if every conceivable effort was made to locate and communicate with the child's guardian and the child's provider was either unknown or also unable to locate the guardian.

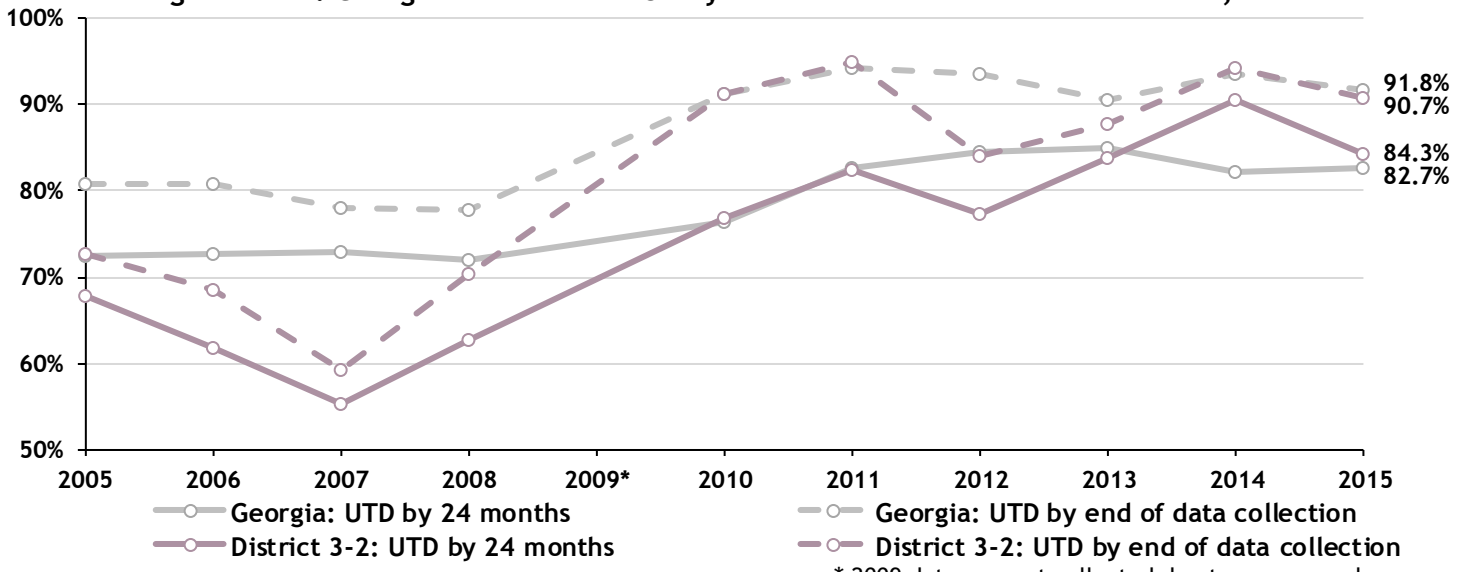
Table 3-2-B: Immunization Summary by Series & Vaccine Antigen, District 3-2, 2015

	District 3-2 (%)	State (%)
UTD immunization rate* **based on GRITS alone**	83.3 ± 7.1	79.7 ± 1.8
UTD immunization rate* **by 24 months**	84.3 ± 6.9	82.7 ± 1.7
UTD immunization rate* **by end of six-month data collection†**	90.7 ± 5.5	91.8 ± 1.2
4 DTaP **by 24 months**	86.1 ± 6.6	84.7 ± 1.6
3 DTaP **by 24 months**	94.4 ± 4.3	95.6 ± 0.9
3 IPV **by 24 months**	94.4 ± 4.3	94.9 ± 1.0
1 MMR **by 24 months**	92.6 ± 5.0	91.2 ± 1.2
UTD Hib **by 24 months**	92.6 ± 5.0	93.9 ± 1.1
3 Hep B **by 24 months**	95.4 ± 4.0	95.9 ± 0.9
1 Varicella **by 24 months**	90.7 ± 5.5	92.0 ± 1.2
UTD PCV **by 24 months**	90.7 ± 5.5	91.1 ± 1.3
2 Rotavirus **by 24 months**	80.6 ± 7.5	87.0 ± 1.5
2 Hep A **by 24 months**	60.2 ± 9.3	58.8 ± 2.2
1+ Influenza **by 24 months**	59.3 ± 9.3	62.1 ± 2.1

† Includes children who become UTD during the data collection period. This number is a testament to the efforts of District staff to reach the children originally listed as pending in their District.

* This rate includes children up-to-date by ACIP-recommended catch-up schedule.

Figure 3-2-A: Georgia Immunization Study and District 3-2 Immunization Rates, 2005-2015



* 2009 data was not collected due to a personnel vacancy.

District 3-2, Georgia Immunization Study Report, p3

Table 3-2-C: District 3-2 Sample Demographics & Immunization Rates, 2015

	Demographics for State and District 3-2 samples		Immunization Rates for District 3-2 Sample		
	Sample of Jan. 2013 births n=2,002 (%)	District 3-2 sample n=108 (%)	UTD based on GRITS alone (%)	UTD by 24 months (%)	UTD by end of data collection (%)
District 3-2 Rates			83.3	**84.3**	90.7
Maternal Race‡,†					
White (n=25)	49.2	23.1	84.0	**84.0**	92.0
Black or African-American (n=67)	34.9	62.0	80.6	**82.1**	89.6
Asian (n=3)	2.9	2.8	100.0	**100.0**	100.0
Multiracial (n=2)	3.6	1.9	100.0	**100.0**	100.0
Maternal Ethnicity‡,†					
Non-Hispanic (n=98)	87.3	90.7	82.7	**83.7**	90.8
Hispanic (n=10)	12.5	9.3	90.0	**90.0**	90.0
Maternal Age‡,†					
<25 years old (n=37)	39.2	34.3	75.7	**75.7**	86.5
25-34 years old (n=49)	47.8	45.4	87.8	**89.8**	93.9
35+ years old (n=22)	12.8	20.4	86.4	**86.4**	90.9
Maternal Education‡,†					
Some college or higher (n=57)	46.5	52.8	94.7	**96.5**	98.2
High school graduate/GED (n=25)	31.6	23.1	80.0	**80.0**	96.0
9th - 11th grade (n=18)	13.9	16.7	66.7	**66.7**	77.8
<9th grade (n=1)	4.0	0.9	.	**.**	.
Maternal Marital Status‡					
Married (n=50)	47.4	46.3	86.0	**88.0**	92.0
Unmarried (n=57)	51.0	52.8	80.7	**80.7**	89.5
WIC$^{\theta}$					
Non-WIC (n=60)	43.2	55.6	83.3	**85.0**	91.7
WIC (n=48)	56.8	44.4	83.3	**83.3**	89.6
Number of Providers†,$^{\theta}$					
One (n=34)	20.6	31.5	85.3	**85.3**	88.2
Two (n=40)	47.9	37.0	82.5	**85.0**	95.0
Three or more (n=28)	26.4	25.9	82.1	**82.1**	89.3
Provider Type†,$^{\theta}$					
Public sector only (n=1)	1.6	0.9	.	**.**	.
Private sector only (n=55)	38.9	50.9	85.5	**85.5**	90.9
Both private and public sector (n=46)	54.4	42.6	82.6	**84.8**	93.5

Θ Please refer to Appendix B for detailed information about the collection of information for this variable.

† Indicates that the percentages for this variable may not add up to 100.0% because the information was missing in some cases.

‡ Indicates that this variable corresponds to the data collected at the time of delivery.

Demographic Findings
In spite of the small sample size and inherent limitations of the data (Methods, page 11), the District 3-2 results suggest that the following groups were the least often up-to-date on their immunizations by 24 months of age:

- Children of mothers with less than a College or higher level of education

Immunization Administration
Of the 2,071 vaccines doses given to the District 3-2 cohort, 6.8% were given by public providers and 93.2% were given by private providers (Figure 3-2-B).

Figure 3-2-B: Immunizations Administered: Private vs. Public Sector, District 3-2, 2015 (n= 2,071)

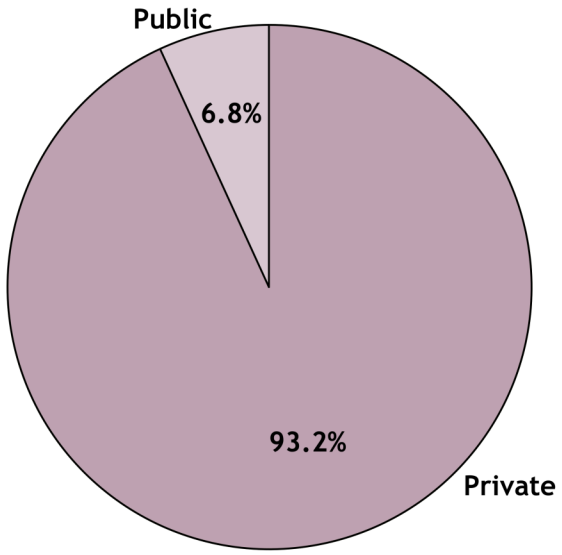


Table 3-2-D: Vaccine Antigen-Specific Immunization Coverage (%) by 24 months of age, District 3-2, 2010-2015

Vaccine Antigen	2011 - 2015	2011	2012	2013	2014	2015
4 DTaP by 24 months		86.3%	83.0%	83.4%	87.5%	86.1%
3 Polio by 24 months		96.3%	91.2%	92.7%	96.9%	94.4%
1 MMR by 24 months		93.8%	87.1%	92.7%	91.9%	92.6%
UTD Hib by 24 months		95.0%	93.8%	93.2%	96.3%	92.6%
3 Hepatitis B by 24 months		96.3%	93.3%	95.1%	96.3%	95.4%
1 Varicella by 24 months		91.9%	88.7%	95.6%	93.8%	90.7%
UTD PCV by 24 months		96.9%	86.6%	81.5%	93.1%	90.7%
2 Rotavirus by 24 months		86.9%	73.2%	81.5%	85.6%	80.6%
1 Influenza by 24 months		58.8%	57.2%	30.7%	51.2%	59.3%
2 Hepatitis A by 24 months		48.1%	50.0%	51.7%	55.0%	60.2%
Hepatitis B birth dose		74.4%	84.0%	78.0%	85.6%	75.9%

Immunization Rates by Vaccine Antigen
In District 3-2, the UTD immunization rates by 24 months for most vaccine antigens decreased (labeled in red) between 2014 and 2015 (Table 3-2-D).

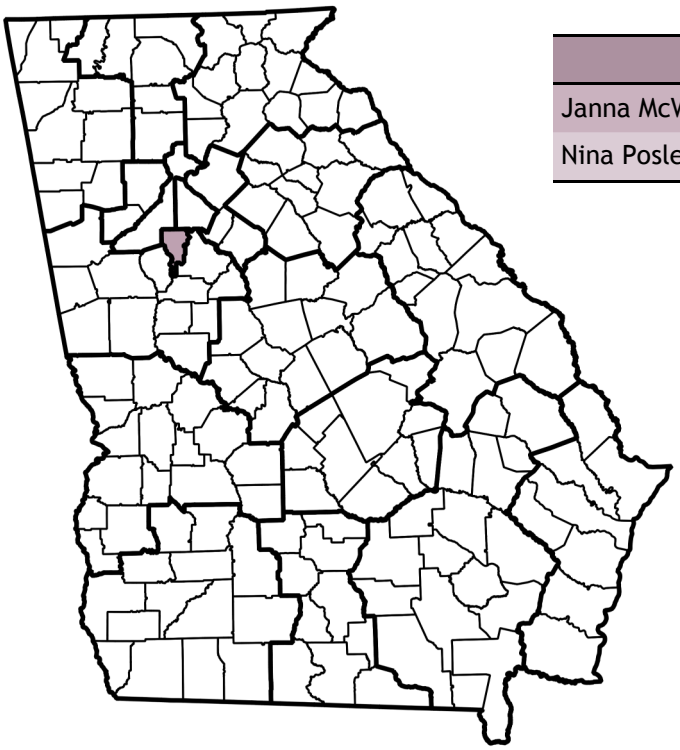
The UTD immunization rates by antigen for most of the 4:3:1:3:3:1:4 series vaccines decreased slightly (less than 5 percentage point difference) from 2014 to 2015, with the exemption of MMR, which increased slightly.

Notable differences in UTD rate by antigen included Rotavirus and the Hepatitis B birth dose, which each decreased by more than 5 percentage points, and Influenza & Hepatitis A, which increased by more than 5 percentage points from 2014 to 2015.

Vaccine Antigen-Specific Conclusions
Antigen-specific data suggest that the 4th DTaP vaccine dose could be the primary focus of District 3-2 and County-level immunization campaigns.

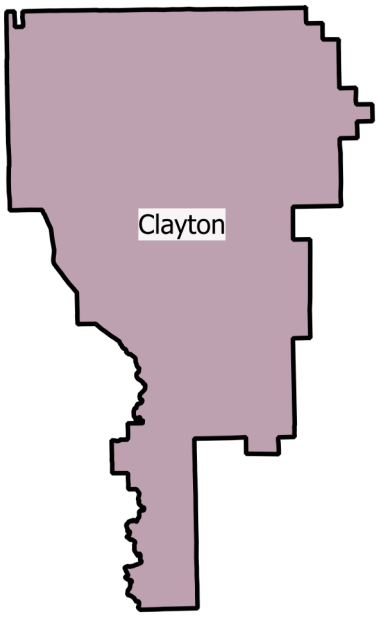
District 3-3

2015 Georgia Immunization Study Report



District 3-3 Data Collection Team	
Janna McWilson, RN	District Immunization Coordinator
Nina Posley, LPN	Immunization Cocasa, Audit Nurse

County	Number in Final Sample
Clayton	125
District 3-3	**125**
District UTD by 24 months Immunization Rate	**87.2%**
State of Georgia	**2,002**
State UTD by 24 months Immunization Rate	**82.7%**



District 3-3

Georgia Immunization Study Report, p2

The 2015 GIS sampled a total of 125 children in District 3-3 (Table 3-3-A).

For the District 3-3 sample, the up-to-date (UTD) immunization rate by 24 months of age (87.2%) was 15.2 percentage points higher than in 2014 (72.0%). The UTD immunization rate based on GRITS alone (83.2%) increased 11.9 percentage points from 2014 (71.3%). The UTD immunization rate by the end of data collection (96.8%) was 10.2 percentage points higher than in 2014 (86.6%). Immunization rates that decreased are shown in red (Table 3-3-B).

A comparison of GIS immunization rates between District 3-3 and Georgia for the 4:3:1:3:3:1:4 series, from 2005 to 2015, is shown in Figure 3-3-A.

Table 3-3-A: GIS Sampling Scheme, District 3-3, 2015

	District 3-3 (n)	State (n)
Original Sample	146	2,225
Ineligible	12	159
(Refused to Participate)	2	15
Eligible Sample	134	2,066
Unable to Locate†	9	64
Final Sample	125	2,002
Response Rate (%)	93.3	96.9

† Children were classified as "Unable to Locate" if every conceivable effort was made to locate and communicate with the child's guardian and the child's provider was either unknown or also unable to locate the guardian.

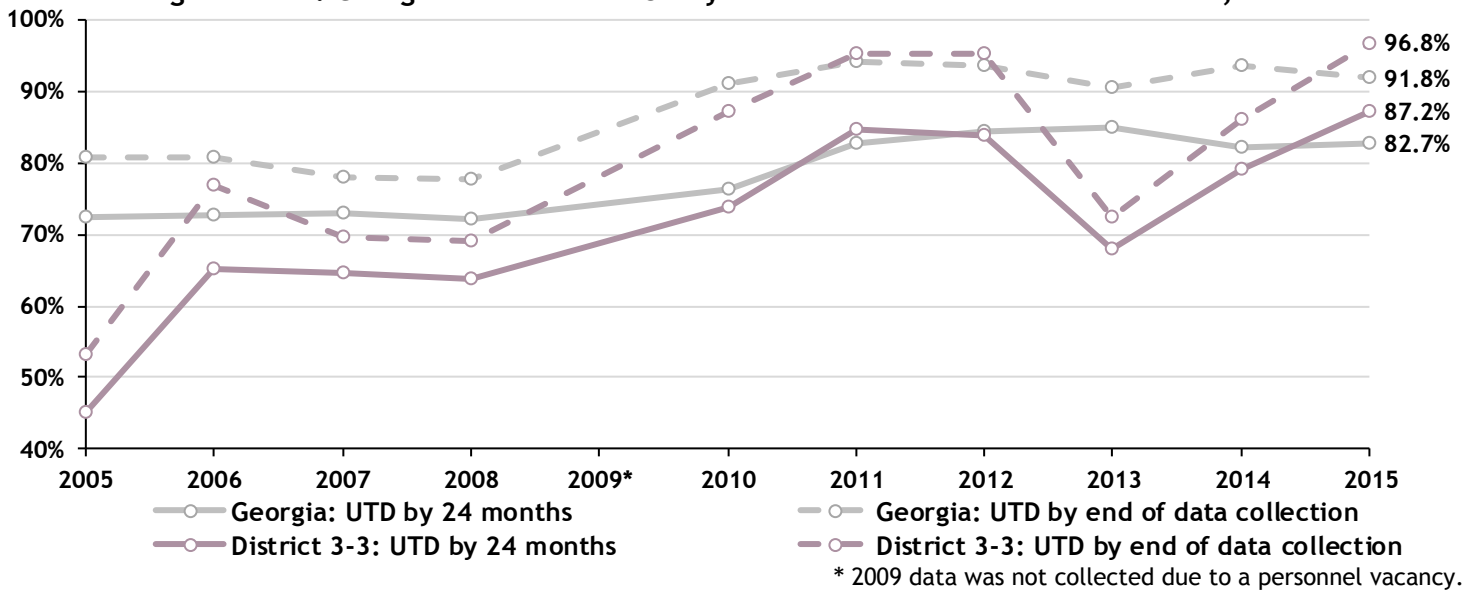
Table 3-3-B: Immunization Summary by Series & Vaccine Antigen, District 3-3, 2015

	District 3-3 (%)	State (%)
UTD immunization rate* **based on GRITS alone**	83.2 ± 6.6	79.7 ± 1.8
UTD immunization rate* **by 24 months**	87.2 ± 5.9	82.7 ± 1.7
UTD immunization rate* **by end of six-month data collection†**	96.8 ± 3.1	91.8 ± 1.2
4 DTaP **by 24 months**	88.0 ± 5.7	84.7 ± 1.6
3 DTaP **by 24 months**	97.6 ± 2.7	95.6 ± 0.9
3 IPV **by 24 months**	96.0 ± 3.4	94.9 ± 1.0
1 MMR **by 24 months**	92.8 ± 4.5	91.2 ± 1.2
UTD Hib **by 24 months**	96.0 ± 3.4	93.9 ± 1.1
3 Hep B **by 24 months**	99.2 ± 1.6	95.9 ± 0.9
1 Varicella **by 24 months**	94.4 ± 4.0	92.0 ± 1.2
UTD PCV **by 24 months**	93.6 ± 4.3	91.1 ± 1.3
2 Rotavirus **by 24 months**	88.0 ± 5.7	87.0 ± 1.5
2 Hep A **by 24 months**	60.0 ± 8.6	58.8 ± 2.2
1+ Influenza **by 24 months**	48.8 ± 8.8	62.1 ± 2.1

† Includes children who become UTD during the data collection period. This number is a testament to the efforts of District staff to reach the children originally listed as pending in their District.

* This rate includes children up-to-date by ACIP-recommended catch-up schedule.

Figure 3-3-A: Georgia Immunization Study and District 3-3 Immunization Rates, 2005-2015



* 2009 data was not collected due to a personnel vacancy.

District 3-3, Georgia Immunization Study Report, p3

Table 3-3-C: District 3-3 Sample Demographics & Immunization Rates, 2015

	Demographics for State and District 3-3 samples		Immunization Rates for District 3-3 Sample		
	Sample of Jan. 2013 births n=2,002 (%)	District 3-3 sample n=125 (%)	UTD based on GRITS alone (%)	UTD by 24 months (%)	UTD by end of data collection (%)
District 3-3 Rates			83.2	**87.2**	96.8
Maternal Race‡,†					
White (n=21)	49.2	16.8	81.0	**85.7**	90.5
Black or African-American (n=71)	34.9	56.8	83.1	**87.3**	97.2
Asian (n=4)	2.9	3.2	75.0	**75.0**	100.0
Multiracial (n=4)	3.6	3.2	100	**100.0**	100.0
Maternal Ethnicity‡,†					
Non-Hispanic (n=97)	87.3	77.6	81.4	**85.6**	95.9
Hispanic (n=28)	12.5	22.4	89.3	**92.9**	100.0
Maternal Age‡,†					
<25 years old (n=52)	39.2	41.6	80.8	**84.6**	98.1
25-34 years old (n=58)	47.8	46.4	82.8	**87.9**	94.8
35+ years old (n=15)	12.8	12.0	93.3	**93.3**	100.0
Maternal Education‡,†					
Some college or higher (n=56)	46.5	44.8	83.9	**91.1**	96.4
High school graduate/GED (n=36)	31.6	28.8	86.1	**86.1**	97.2
9th - 11th grade (n=18)	13.9	14.4	72.2	**77.8**	94.4
<9th grade (n=9)	4.0	7.2	88.9	**88.9**	100.0
Maternal Marital Status‡					
Married (n=45)	47.4	36.0	88.9	**93.3**	97.8
Unmarried (n=80)	51.0	64.0	80.0	**83.8**	96.3
WIC$^{\theta}$					
Non-WIC (n=62)	43.2	49.6	80.6	**87.1**	98.4
WIC (n=63)	56.8	50.4	85.7	**87.3**	95.2
Number of Providers†,$^{\theta}$					
One (n=31)	20.6	24.8	93.5	**93.5**	100.0
Two (n=58)	47.9	46.4	87.9	**93.1**	100.0
Three or more (n=28)	26.4	22.4	67.9	**71.4**	89.3
Provider Type†,$^{\theta}$					
Public sector only (n=1)	1.6	0.8	100.0	**100.0**	100.0
Private sector only (n=66)	38.9	52.8	86.4	**89.4**	100.0
Both private and public sector (n=50)	54.4	40.0	82.0	**86.0**	94.0

Θ Please refer to Appendix B for detailed information about the collection of information for this variable.

† Indicates that the percentages for this variable may not add up to 100.0% because the information was missing in some cases.

‡ Indicates that this variable corresponds to the data collected at the time of delivery.

District 3-3, Georgia Immunization Study Report, p4

Demographic Findings
In spite of the small sample size and inherent limitations of the data (Methods, page 11), the District 3-3 results suggest that the following groups were the least often up-to-date on their immunizations by 24 months of age:

- Children receiving immunizations from three or more different providers

Immunization Administration
Of the 2,425 vaccines doses given to the District 3-3 cohort, 5.2% were given by public providers and 94.8% were given by private providers (Figure 3-3-B).

Figure 3-3-B: Immunizations Administered: Private vs. Public Sector, District 3-3, 2015 (n= 2,425)

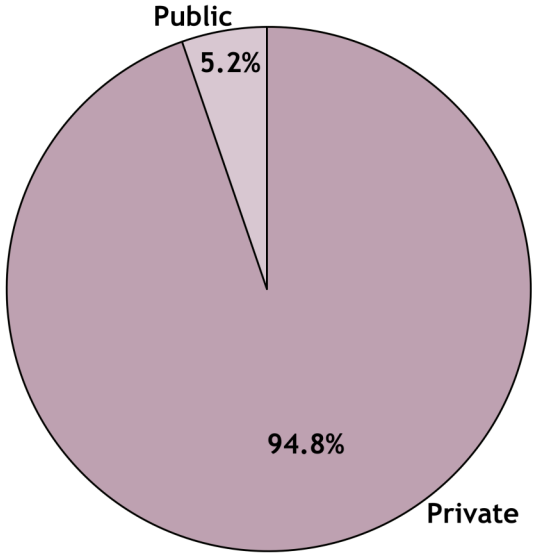


Table 3-3-D: Vaccine Antigen-Specific Immunization Coverage (%) by 24 months of age, District 3-3, 2010-2015

Vaccine Antigen	2011 - 2015	2011	2012	2013	2014	2015
4 DTaP by 24 months		88.5%	84.7%	67.2%	73.9%	88.0%
3 Polio by 24 months		97.1%	95.2%	86.1%	89.2%	96.0%
1 MMR by 24 months		93.3%	94.4%	82.5%	84.1%	92.8%
UTD Hib by 24 months		94.2%	93.6%	85.4%	88.5%	96.0%
3 Hepatitis B by 24 months		97.1%	96.0%	85.4%	93.0%	99.2%
1 Varicella by 24 months		94.2%	96.0%	83.2%	84.7%	94.4%
UTD PCV by 24 months		98.1%	92.0%	65.0%	82.8%	93.6%
2 Rotavirus by 24 months		81.7%	62.9%	75.2%	83.4%	88.0%
1 Influenza by 24 months		47.1%	41.9%	13.1%	56.1%	48.8%
2 Hepatitis A by 24 months		51.9%	54.0%	47.4%	47.8%	60.0%
Hepatitis B birth dose		88.5%	89.5%	82.5%	89.2%	86.4%

Immunization Rates by Vaccine Antigen
In District 3-3, the UTD immunization rates by 24 months for most vaccine antigens increased between 2014 and 2015 (Table 3-3-D).

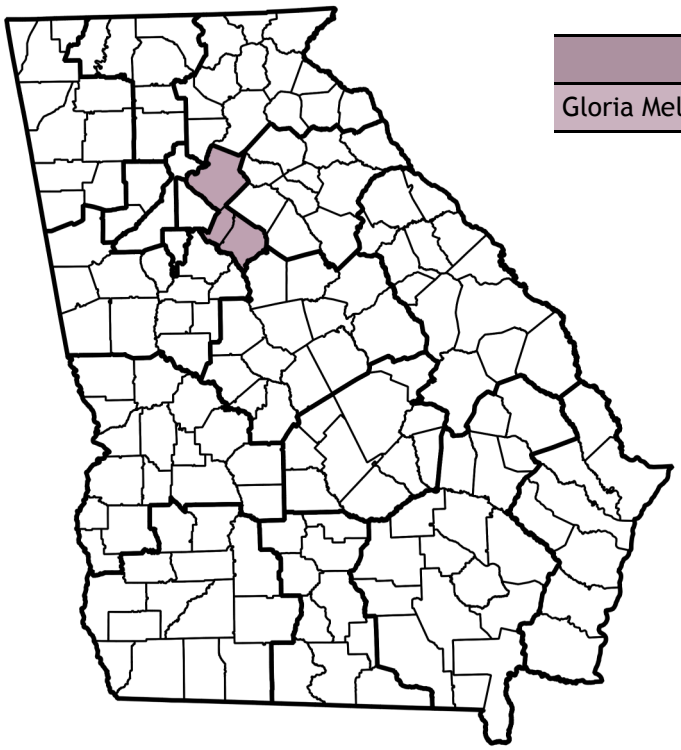
The UTD rate by antigen for all of the 4:3:1:3:3:1:4 series vaccines increased by more than 5 percentage points from 2014 to 2015.

Other notable differences in UTD rate by antigen included Influenza, which decreased by more than 5 percentage points, and Hepatitis A, which increased by more than 5 percentage points, from 2014 to 2015.

Vaccine Antigen-Specific Conclusions
Antigen-specific data suggest that the 4th DTaP dose and Influenza could be the primary focus of District 3-3 and County-level immunization campaigns.

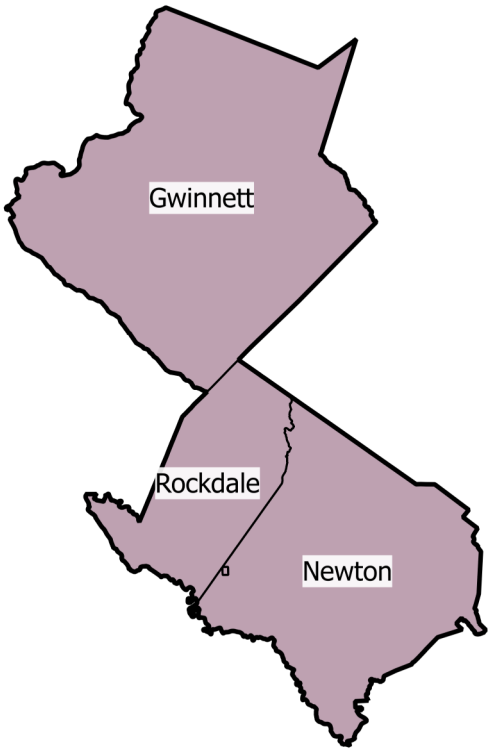
District 3-4

2015 Georgia Immunization Study Report



District 3-4 Data Collection Team	
Gloria Melvin	District Immunization Coordinator

County	Number in Final Sample
Gwinnett	122
Newton	22
Rockdale	11
District 3-4	**155**
District UTD by 24 months Immunization Rate	**83.2%**
State of Georgia	**2,002**
State UTD by 24 months Immunization Rate	**82.7%**



District 3-4

Georgia Immunization Study Report, p2

The 2015 GIS sampled a total of 155 children in District 3-4 (Table 3-4-A).

For the District 3-4 sample, the up-to-date (UTD) immunization rate by 24 months of age (83.2%) was 2.2% percentage points higher than in 2014 (81.0%). The UTD immunization rate based on GRITS alone (79.4%) increased 5.5 percentage points from 2014 (73.9%). The UTD immunization rate by the end of data collection (90.3%) was 1.9 percentage points lower than in 2014 (92.2%). Immunization rates that decreased are shown in red (Table 3-4-B).

A comparison of GIS immunization rates between District 3-4 and Georgia for the 4:3:1:3:3:1:4 series, from 2005 to 2015, is shown in Figure 3-4-A.

Table 3-4-A: GIS Sampling Scheme, District 3-4, 2015

	District 3-4 (n)	State (n)
Original Sample	173	2,225
Ineligible	13	159
(Refused to Participate)	.	15
Eligible Sample	160	2,066
Unable to Locate†	5	64
Final Sample	155	2,002
Response Rate (%)	89.6	96.9

† Children were classified as "Unable to Locate" if every conceivable effort was made to locate and communicate with the child's guardian and the child's provider was either unknown or also unable to locate the guardian.

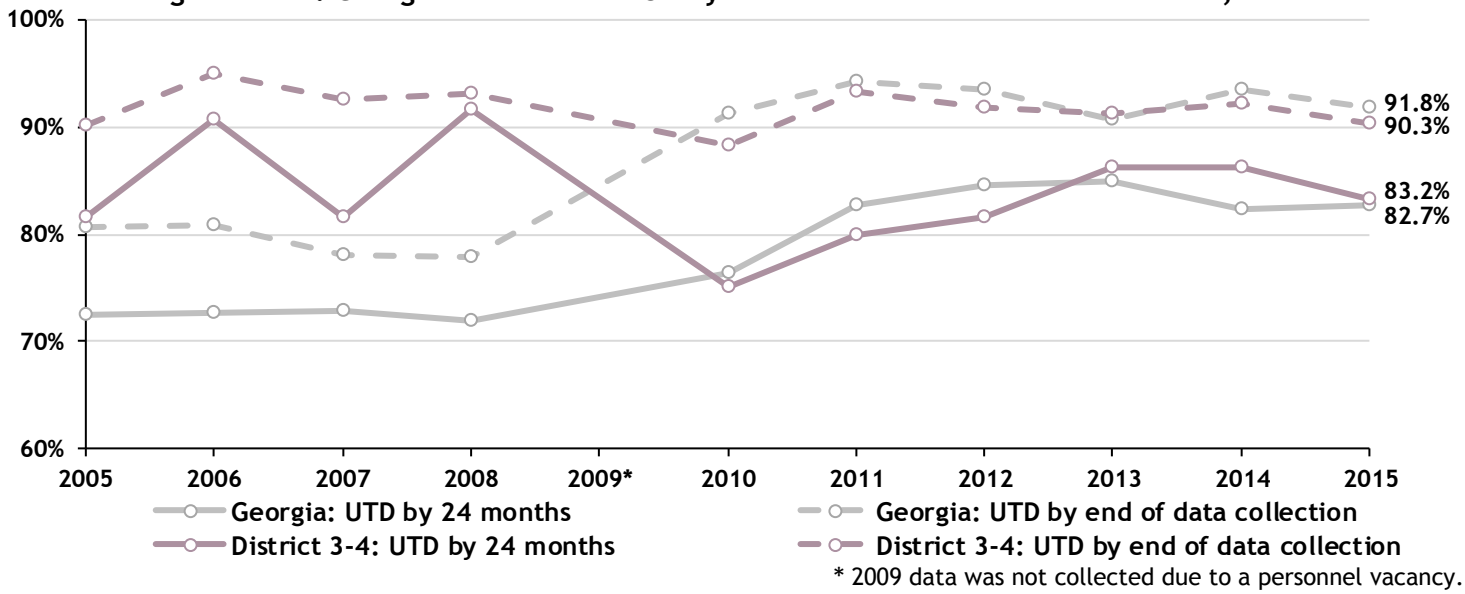
Table 3-4-B: Immunization Summary by Series & Vaccine Antigen, District 3-4, 2015

	District 3-4 (%)	State (%)
UTD immunization rate* **based on GRITS alone**	79.4 ± 6.4	79.7 ± 1.8
UTD immunization rate* **by 24 months**	83.2 ± 5.9	82.7 ± 1.7
UTD immunization rate* **by end of six-month data collection†**	90.3 ± 4.7	91.8 ± 1.2
4 DTaP **by 24 months**	85.8 ± 5.5	84.7 ± 1.6
3 DTaP **by 24 months**	92.3 ± 4.2	95.6 ± 0.9
3 IPV **by 24 months**	92.3 ± 4.2	94.9 ± 1.0
1 MMR **by 24 months**	89.0 ± 4.9	91.2 ± 1.2
UTD Hib **by 24 months**	91.0 ± 4.5	93.9 ± 1.1
3 Hep B **by 24 months**	92.3 ± 4.2	95.9 ± 0.9
1 Varicella **by 24 months**	90.3 ± 4.7	92.0 ± 1.2
UTD PCV **by 24 months**	88.4 ± 5.1	91.1 ± 1.3
2 Rotavirus **by 24 months**	84.5 ± 5.7	87.0 ± 1.5
2 Hep A **by 24 months**	56.8 ± 7.8	58.8 ± 2.2
1+ Influenza **by 24 months**	60.6 ± 7.7	62.1 ± 2.1

† Includes children who become UTD during the data collection period. This number is a testament to the efforts of District staff to reach the children originally listed as pending in their District.

* This rate includes children up-to-date by ACIP-recommended catch-up schedule.

Figure 3-4-A: Georgia Immunization Study and District 3-4 Immunization Rates, 2005-2015



* 2009 data was not collected due to a personnel vacancy.

District 3-4, Georgia Immunization Study Report, p3

Table 3-4-C: District 3-4 Sample Demographics & Immunization Rates, 2015

	Demographics for State and District 3-4 samples		Immunization Rates for District 3-4 Sample		
	Sample of Jan. 2013 births n=2,002 (%)	District 3-4 sample n=155 (%)	UTD based on GRITS alone (%)	UTD by 24 months (%)	UTD by end of data collection (%)
District 3-4 Rates			79.4	**83.2**	90.3
Maternal Race‡,†					
White (n=74)	49.2	47.7	74.3	**79.7**	87.8
Black or African-American (n=39)	34.9	25.2	87.2	**87.2**	89.7
Asian (n=18)	2.9	11.6	72.2	**83.3**	94.4
Multiracial (n=5)	3.6	3.2	100.0	**100.0**	100.0
Maternal Ethnicity‡,†					
Non-Hispanic (n=118)	87.3	76.1	78.0	**81.4**	87.3
Hispanic (n=37)	12.5	23.9	83.8	**89.2**	100.0
Maternal Age‡,†					
<25 years old (n=39)	39.2	25.2	71.8	**76.9**	82.1
25-34 years old (n=90)	47.8	58.1	82.2	**85.6**	94.4
35+ years old (n=26)	12.8	16.8	80.8	**84.6**	88.5
Maternal Education‡,†					
Some college or higher (n=86)	46.5	55.5	82.6	**87.2**	91.9
High school graduate/GED (n=34)	31.6	21.9	76.5	**82.4**	88.2
9th - 11th grade (n=11)	13.9	7.1	72.7	**72.7**	81.8
<9th grade (n=12)	4.0	7.7	75.0	**75.0**	100.0
Maternal Marital Status‡					
Married (n=92)	47.4	59.4	80.4	**84.8**	92.4
Unmarried (n=62)	51.0	40.0	77.4	**80.6**	87.1
WIC$^{\theta}$					
Non-WIC (n=74)	43.2	47.7	81.1	**83.8**	90.5
WIC (n=81)	56.8	52.3	77.8	**82.7**	90.1
Number of Providers†,$^{\theta}$					
One (n=35)	20.6	22.6	85.7	**91.4**	97.1
Two (n=73)	47.9	47.1	78.1	**80.8**	89.0
Three or more (n=37)	26.4	23.9	86.5	**91.9**	97.3
Provider Type†,$^{\theta}$					
Public sector only (n=0)	.	.	.	.	.
Private sector only (n=82)	38.9	52.9	84.1	**87.8**	93.9
Both private and public sector (n=63)	54.4	40.6	79.4	**84.1**	92.1

Θ Please refer to Appendix B for detailed information about the collection of information for this variable.

† Indicates that the percentages for this variable may not add up to 100.0% because the information was missing in some cases.

‡ Indicates that this variable corresponds to the data collected at the time of delivery.

Demographic Findings
Because of the small sample size and inherent limitations of the data (Methods, page 11), no statistically significant differences in the UTD by 24 months immunization rates were found within the demographic groups in District 3-4 (Table 3-4-C).

Immunization Administration
Of the 3,039 vaccines doses given to the District 3-4 cohort, 3.2% were given by public providers and 96.8% were given by private providers (Figure 3-4-B).

Figure 3-4-B: Immunizations Administered: Private vs. Public Sector, District 3-4, 2015 (n= 3,039)

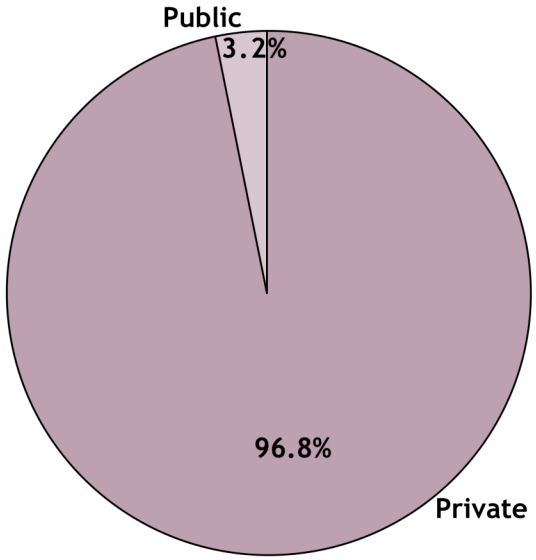


Table 3-4-D: Vaccine Antigen-Specific Immunization Coverage (%) by 24 months of age, District 3-4, 2010-2015

Vaccine Antigen	2011 - 2015	2011	2012	2013	2014	2015
4 DTaP by 24 months		83.9%	83.6%	88.0%	83.7%	85.8%
3 Polio by 24 months		96.1%	95.9%	95.1%	96.1%	92.3%
1 MMR by 24 months		90.6%	91.8%	93.4%	91.5%	89.0%
UTD Hib by 24 months		97.2%	96.9%	94.0%	94.8%	91.0%
3 Hepatitis B by 24 months		93.3%	92.8%	95.6%	95.4%	92.3%
1 Varicella by 24 months		91.7%	91.8%	95.1%	92.2%	90.3%
UTD PCV by 24 months		97.8%	91.3%	88.0%	94.8%	88.4%
2 Rotavirus by 24 months		91.7%	81.0%	87.4%	92.2%	84.5%
1 Influenza by 24 months		60.6%	59.0%	26.8%	64.7%	60.6%
2 Hepatitis A by 24 months		48.9%	54.4%	55.7%	54.2%	56.8%
Hepatitis B birth dose		80.0%	77.9%	80.9%	73.9%	75.5%

Immunization Rates by Vaccine Antigen
In District 3-4, the UTD immunization rates by 24 months for most vaccine antigens decreased (labeled in red) between 2014 and 2015 (Table 3-4-D).

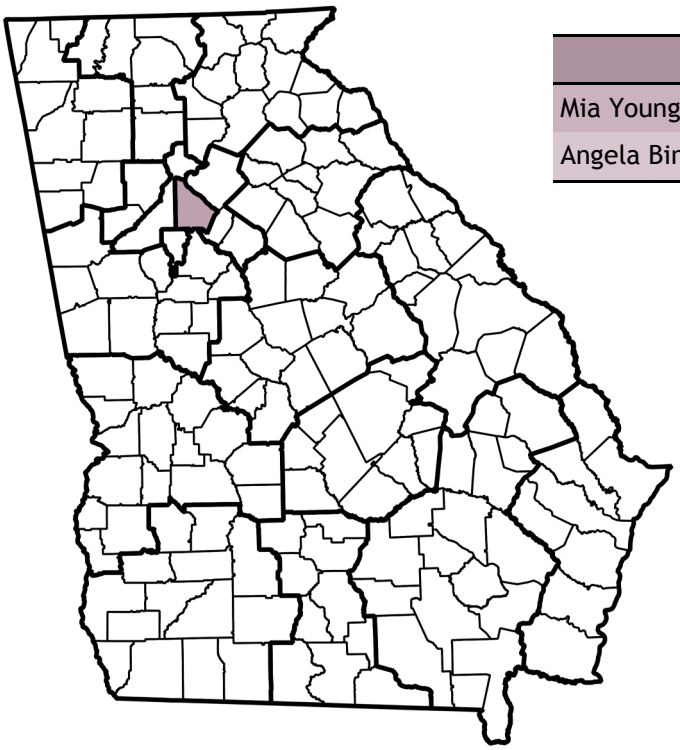
The biggest difference in UTD rates by antigen for the 4:3:1:3:3:1:4 series vaccines was observed among HiB, which decreased by more than 5 percentage points from 2014 to 2015.

Other notable differences in UTD rate by antigen included Rotavirus, which decreased by more than 5 percentage points from 2014 to 2015.

Vaccine Antigen-Specific Conclusions
Antigen-specific data suggest that the 4th DTaP dose, MMR, and PCV vaccines could be the primary focus of District 3-4 and County-level immunization campaigns.

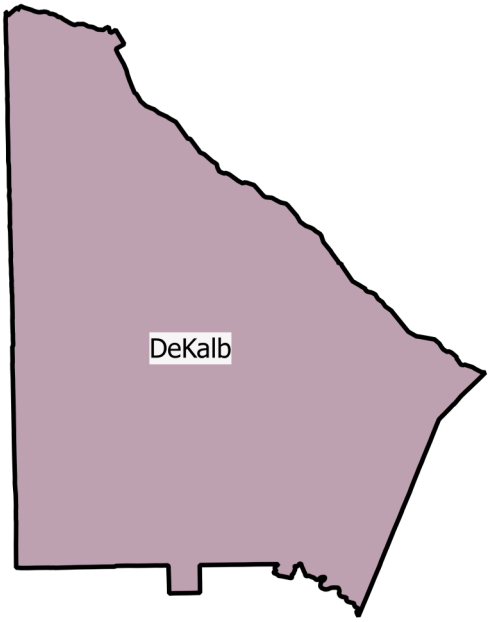
District 3-5

2015 Georgia Immunization Study Report



District 3-5 Data Collection Team	
Mia Young, MBA	District Immunization Coordinator
Angela Bines	Primary Data Collector

County	Number in Final Sample
DeKalb	128
District 3-5	**128**
District UTD by 24 months Immunization Rate	**73.8%**
State of Georgia	**2,002**
State UTD by 24 months Immunization Rate	**82.7%**



Note
District 3-5 had an unfilled vacancy for most of the data collection period. As such, data collected was limited and may not accurately reflect the true immunization coverage rates of the District due to staff limitations.

District 3-5

Georgia Immunization Study Report, p2

The 2015 GIS sampled a total of 130 children in District 3-5 (Table 3-5-A).

For the District 3-5 sample, the up-to-date (UTD) immunization rate by 24 months of age (73.8%) was 14.9 percentage points lower than in 2014 (88.7%). The UTD immunization rate based on GRITS alone (73.1%) decreased 13.5 percentage points from 2014 (86.6%). The UTD immunization rate by the end of data collection (80.0%) was 17.9 percentage points lower than in 2014 (97.9%). Immunization rates that decreased are shown in red (Table 3-5-B).

A comparison of GIS immunization rates between District 3-5 and Georgia for the 4:3:1:3:3:1:4 series, from 2005 to 2015, is shown in Figure 3-5-A.

Table 3-5-A: GIS Sampling Scheme, District 3-5, 2015

	District 3-5 (n)	State (n)
Original Sample	135	2,225
Ineligible	.	159
(Refused to Participate)	.	15
Eligible Sample	135	2,066
Unable to Locate†	5	64
Final Sample	130	2,002
Response Rate (%)	96.3	96.9

† Children were classified as "Unable to Locate" if every conceivable effort was made to locate and communicate with the child's guardian and the child's provider was either unknown or also unable to locate the guardian.

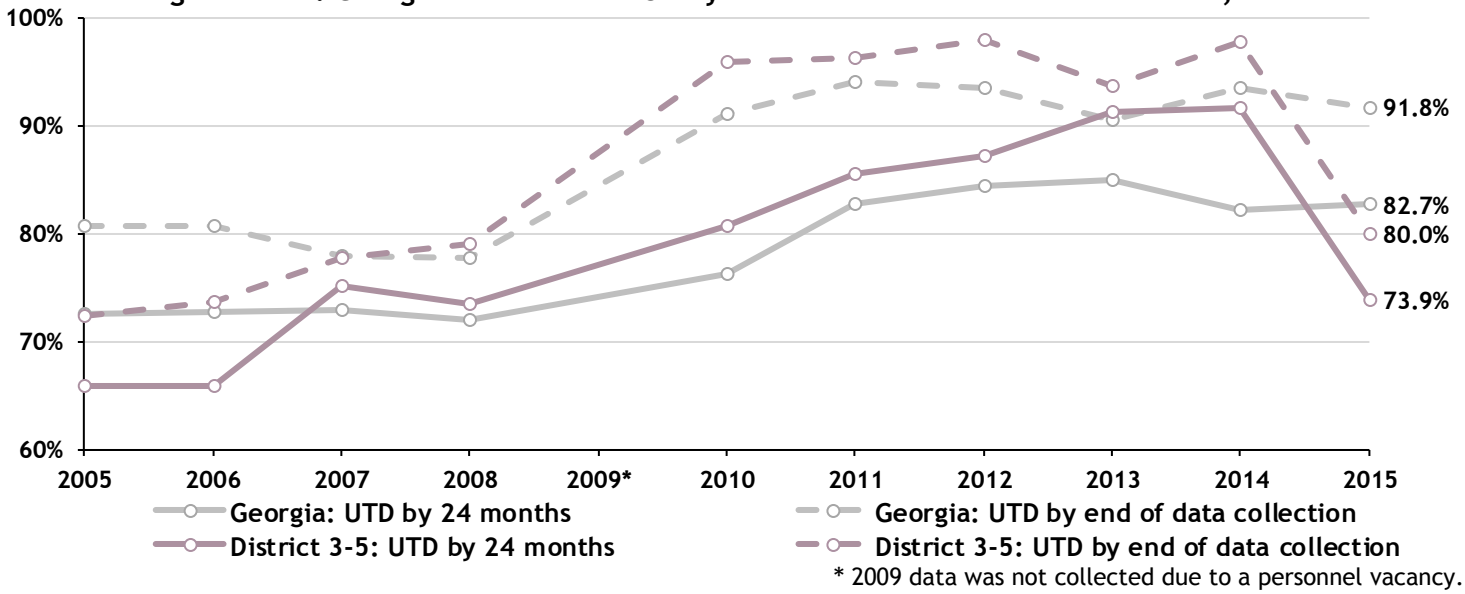
Table 3-5-B: Immunization Summary by Series & Vaccine Antigen, District 3-5, 2015

	District 3-5 (%)	State (%)
UTD immunization rate* **based on GRITS alone**	73.1 ± 7.7	79.7 ± 1.8
UTD immunization rate* **by 24 months**	73.8 ± 7.6	82.7 ± 1.7
UTD immunization rate* **by end of six-month data collection†**	80.0 ± 6.9	91.8 ± 1.2
4 DTaP **by 24 months**	75.4 ± 7.4	84.7 ± 1.6
3 DTaP **by 24 months**	90.8 ± 5.0	95.6 ± 0.9
3 IPV **by 24 months**	89.2 ± 5.3	94.9 ± 1.0
1 MMR **by 24 months**	85.4 ± 6.1	91.2 ± 1.2
UTD Hib **by 24 months**	87.7 ± 5.7	93.9 ± 1.1
3 Hep B **by 24 months**	93.1 ± 4.4	95.9 ± 0.9
1 Varicella **by 24 months**	86.9 ± 5.8	92.0 ± 1.2
UTD PCV **by 24 months**	83.8 ± 6.4	91.1 ± 1.3
2 Rotavirus **by 24 months**	83.1 ± 6.5	87.0 ± 1.5
2 Hep A **by 24 months**	55.4 ± 8.6	58.8 ± 2.2
1+ Influenza **by 24 months**	68.5 ± 8.0	62.1 ± 2.1

† Includes children who become UTD during the data collection period. This number is a testament to the efforts of District staff to reach the children originally listed as pending in their District.

* This rate includes children up-to-date by ACIP-recommended catch-up schedule.

Figure 3-5-A: Georgia Immunization Study and District 3-5 Immunization Rates, 2005-2015



* 2009 data was not collected due to a personnel vacancy.

District 3-5, Georgia Immunization Study Report, p3

Table 3-5-C: District 3-5 Sample Demographics & Immunization Rates, 2015

	Demographics for State and District 3-5 samples		Immunization Rates for District 3-5 Sample		
	Sample of Jan. 2013 births n=2,002 (%)	District 3-5 sample n=130 (%)	UTD based on GRITS alone (%)	UTD by 24 months (%)	UTD by end of data collection (%)
District 3-5 Rates			73.1	**73.8**	80.0
Maternal Race‡,†					
White (n=26)	49.2	20.0	88.5	**88.5**	88.5
Black or African-American (n=63)	34.9	48.5	66.7	**66.7**	79.4
Asian (n=10)	2.9	7.7	70.0	**70.0**	70.0
Multiracial (n=7)	3.6	5.4	71.4	**71.4**	71.4
Maternal Ethnicity‡,†					
Non-Hispanic (n=110)	87.3	84.6	70.9	**70.9**	77.3
Hispanic (n=19)	12.5	14.6	84.2	**89.5**	94.7
Maternal Age‡,†					
<25 years old (n=43)	39.2	33.1	65.1	**65.1**	76.7
25-34 years old (n=59)	47.8	45.4	72.9	**74.6**	79.7
35+ years old (n=27)	12.8	20.8	85.2	**85.2**	85.2
Maternal Education‡,†					
Some college or higher (n=69)	46.5	53.1	76.8	**76.8**	84.1
High school graduate/GED (n=39)	31.6	30.0	69.2	**69.2**	69.2
9th - 11th grade (n=10)	13.9	7.7	60.0	**70.0**	90.0
<9th grade (n=5)	4.0	3.8	100.0	**100.0**	100.0
Maternal Marital Status‡					
Married (n=58)	47.4	44.6	79.3	**81.0**	82.8
Unmarried (n=71)	51.0	54.6	67.6	**67.6**	77.5
WIC$^{\theta}$					
Non-WIC (n=68)	43.2	52.3	75.0	**75.0**	80.9
WIC (n=62)	56.8	47.7	71.0	**72.6**	79.0
Number of Providers†,$^{\theta}$					
One (n=33)	20.6	25.4	78.8	**78.8**	81.8
Two (n=60)	47.9	46.2	73.3	**75.0**	78.3
Three or more (n=27)	26.4	20.8	70.4	**70.4**	88.9
Provider Type†,$^{\theta}$					
Public sector (n=2)	1.6	1.5	.	**.**	.
Private sector only (n=60)	38.9	46.2	85.0	**86.7**	88.3
Both private and public sector (n=58)	54.4	44.6	65.5	**65.5**	77.6

Θ Please refer to Appendix B for detailed information about the collection of information for this variable.

† Indicates that the percentages for this variable may not add up to 100.0% because the information was missing in some cases.

‡ Indicates that this variable corresponds to the data collected at the time of delivery.

District 3-5, Georgia Immunization Study Report, p4

Demographic Findings
In spite of the small sample size and inherent limitations of the data (Methods, page 11), the District 3-5 results suggest that the following groups were the least often up-to-date on their immunizations by 24 months of age:

- Children receiving immunizations from both private and public sector providers

Immunization Administration
Of the 2,427 vaccines doses given to the District 3-5 cohort, 4.0% were given by public providers and 95.8% were given by private providers (Figure 3-5-B).

Figure 3-5-B: Immunizations Administered: Private vs. Public Sector, District 3-5, 2015 (n= 2,427)

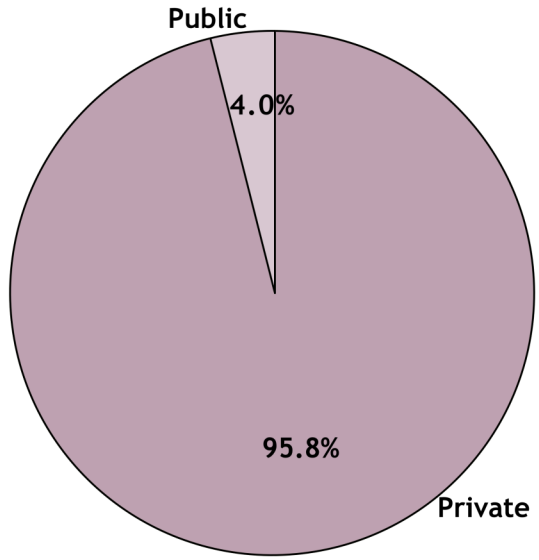


Table 3-5-D: Vaccine Antigen-Specific Immunization Coverage (%) by 24 months of age, District 3-5, 2010-2015

Vaccine Antigen	2011 - 2015	2011	2012	2013	2014	2015
4 DTaP by 24 months		86.2%	90.0%	88.3%	88.7%	75.4%
3 Polio by 24 months		97.8%	98.0%	98.1%	96.9%	89.2%
1 MMR by 24 months		92.8%	96.0%	94.4%	96.9%	85.4%
UTD Hib by 24 months		96.4%	97.3%	96.9%	95.9%	87.7%
3 Hepatitis B by 24 months		98.6%	96.0%	98.1%	96.9%	93.1%
1 Varicella by 24 months		93.5%	96.7%	94.4%	97.9%	86.9%
UTD PCV by 24 months		97.8%	96.0%	88.3%	96.9%	83.8%
2 Rotavirus by 24 months		91.3%	75.3%	85.8%	85.6%	83.1%
1 Influenza by 24 months		64.5%	64.0%	29.0%	72.2%	68.5%
2 Hepatitis A by 24 months		44.9%	60.7%	49.4%	61.9%	55.4%
Hepatitis B birth dose		77.5%	82.7%	79.0%	84.5%	81.5%

Immunization Rates by Vaccine Antigen
In District 3-5, the UTD immunization rates by 24 months for all vaccine antigens decreased (labeled in red) between 2014 and 2015 (Table 3-5-D).

The UTD rate by antigen for most the 4:3:1:3:3:1:4 series vaccines decreased by more than 5 percentage points, except for Hepatitis B, which decreased by less than 5 percentage points, from 2014 to 2015.

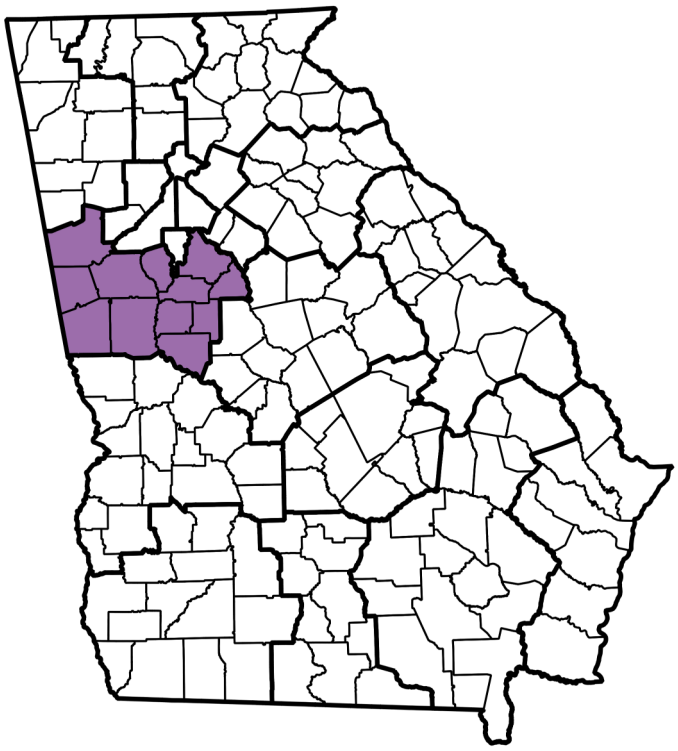
Other notable differences in UTD rates by antigen included Hepatitis A, which decreased by more than 5 percentage points from 2014 to 2015.

Vaccine Antigen-Specific Conclusions
Antigen-specific data suggest that the DTaP, Polio, MMR, Hib and Varicella vaccines could be the primary focus of District 3-5 immunization campaigns.

Note
District 3-5 had an unfilled vacancy for most of the data collection period. As such, data collected was limited and may not accurately reflect the true immunization coverage rates of the district due to staffing limitations.

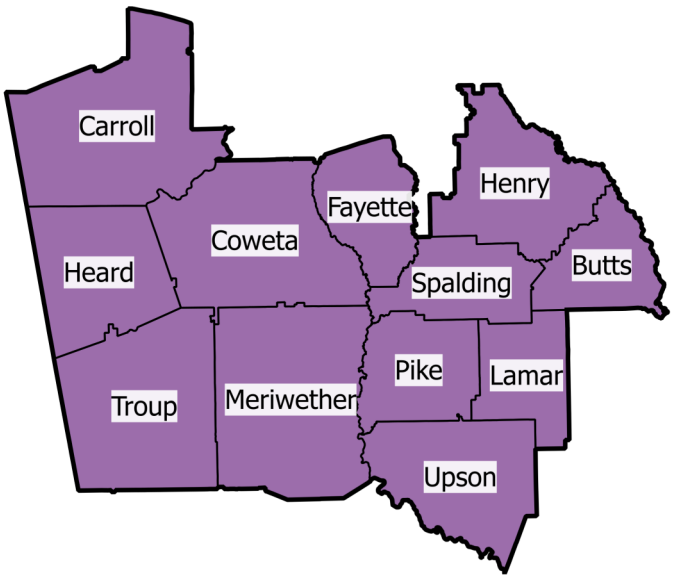
District 4-0

2015 Georgia Immunization Study Report



District 4-0 Data Collection Team	
Amy Fenn, RN	District Immunization Coordinator
Darlene Sheets	Secondary Data Collector

County	Number in Final Sample
Butts	4
Carroll	20
Coweta	16
Fayette	21
Heard	1
Henry	36
Lamar	3
Meriwether	3
Pike	1
Spalding	18
Troup	15
Upson	4
District 4-0	**142**
District UTD by 24 months Immunization Rate	**78.2%**
State of Georgia	**2,002**
State UTD by 24 months Immunization Rate	**82.7%**



District 4-0

Georgia Immunization Study Report, p2

The 2015 GIS sampled a total of 142 children in District 4-0 (Table 4-0-A).

For the District 4-0 sample, the up-to-date (UTD) immunization rate by 24 months of age (78.2%) was 2.0 percentage points lower than in 2014 (80.3%). The UTD immunization rate based on GRITS alone (77.5%) decreased 2.1 percentage points from 2014 (79.6%). The UTD immunization rate by the end of data collection (85.9%) was 5.8 percentage points lower than in 2014 (91.7%). Immunization rates that decreased are shown in red (Table 4-0-B).

A comparison of GIS immunization rates between District 4-0 and Georgia for the 4:3:1:3:3:1:4 series, from 2005 to 2015, is shown in Figure 4-0-A.

Table 4-0-A: GIS Sampling Scheme, District 4-0, 2015

	District 4-0 (n)	State (n)
Original Sample	146	2,225
Ineligible	2	159
(Refused to Participate)	.	15
Eligible Sample	144	2,066
Unable to Locate†	2	64
Final Sample	142	2,002
Response Rate (%)	98.6	96.9

† Children were classified as "Unable to Locate" if every conceivable effort was made to locate and communicate with the child's guardian and the child's provider was either unknown or also unable to locate the guardian.

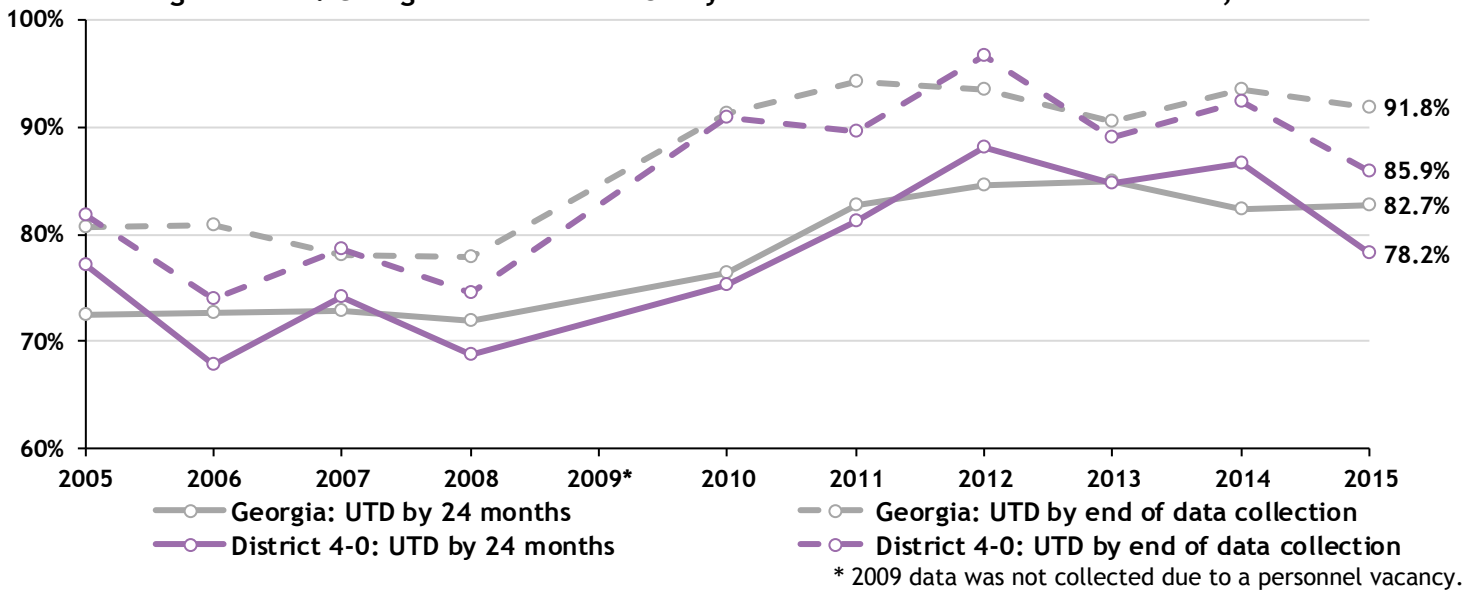
Table 4-0-B: Immunization Summary by Series & Vaccine Antigen, District 4-0, 2015

	District 4-0 (%)	State (%)
UTD immunization rate* **based on GRITS alone**	77.5 ± 6.9	79.7 ± 1.8
UTD immunization rate* **by 24 months**	78.2 ± 6.8	82.7 ± 1.7
UTD immunization rate* **by end of six-month data collection†**	85.9 ± 5.7	91.8 ± 1.2
4 DTaP **by 24 months**	79.6 ± 6.7	84.7 ± 1.6
3 DTaP **by 24 months**	94.4 ± 3.8	95.6 ± 0.9
3 IPV **by 24 months**	94.4 ± 3.8	94.9 ± 1.0
1 MMR **by 24 months**	88.0 ± 5.4	91.2 ± 1.2
UTD Hib **by 24 months**	92.3 ± 4.4	93.9 ± 1.1
3 Hep B **by 24 months**	94.4 ± 3.8	95.9 ± 0.9
1 Varicella **by 24 months**	89.4 ± 5.1	92.0 ± 1.2
UTD PCV **by 24 months**	89.4 ± 5.1	91.1 ± 1.3
2 Rotavirus **by 24 months**	85.2 ± 5.9	87.0 ± 1.5
2 Hep A **by 24 months**	52.1 ± 8.2	58.8 ± 2.2
1+ Influenza **by 24 months**	61.3 ± 8.0	62.1 ± 2.1

† Includes children who become UTD during the data collection period. This number is a testament to the efforts of District staff to reach the children originally listed as pending in their District.

* This rate includes children up-to-date by ACIP-recommended catch-up schedule.

Figure 4-0-A: Georgia Immunization Study and District 4-0 Immunization Rates, 2005-2015



* 2009 data was not collected due to a personnel vacancy.

District 4-0, Georgia Immunization Study Report, p3

Table 4-0-C: District 4-0 Sample Demographics & Immunization Rates, 2015

	Demographics for State and District 4-0 samples		Immunization Rates for District 4-0 Sample		
	Sample of Jan. 2013 births n=2,002 (%)	District 4-0 sample n=142 (%)	UTD based on GRITS alone (%)	UTD by 24 months (%)	UTD by end of data collection (%)
District 4-0 Rates			77.5	**78.2**	85.9
Maternal Race‡,†					
White (n=81)	49.2	57.0	75.3	**76.5**	84.0
Black or African-American (n=41)	34.9	28.9	80.5	**80.5**	90.2
Asian (n=1)	2.9	0.7	100.0	**100.0**	100.0
Multiracial (n=8)	3.6	5.6	62.5	**62.5**	75.0
Maternal Ethnicity‡,†					
Non-Hispanic (n=126)	87.3	88.7	75.4	**76.2**	84.9
Hispanic (n=15)	12.5	10.6	93.3	**93.3**	93.3
Maternal Age‡,†					
<25 years old (n=52)	39.2	36.6	69.2	**69.2**	80.8
25-34 years old (n=69)	47.8	48.6	84.1	**84.1**	87.0
35+ years old (n=20)	12.8	14.1	75.0	**80.0**	95.0
Maternal Education‡,†					
Some college or higher (n=77)	46.5	54.2	77.9	**79.2**	84.4
High school graduate/GED (n=43)	31.6	30.3	79.1	**79.1**	86.0
9th - 11th grade (n=17)	13.9	12.0	64.7	**64.7**	88.2
<9th grade (n=4)	4.0	2.8	100.0	**100.0**	100.0
Maternal Marital Status‡					
Married (n=69)	47.4	48.6	82.6	**84.1**	89.9
Unmarried (n=68)	51.0	47.9	70.6	**70.6**	80.9
WIC$^{\theta}$					
Non-WIC (n=56)	43.2	39.4	82.1	**82.1**	87.5
WIC (n=86)	56.8	60.6	74.4	**75.6**	84.9
Number of Providers†,$^{\theta}$					
One (n=42)	20.6	29.6	71.4	**71.4**	83.3
Two (n=65)	47.9	45.8	80.0	**81.5**	87.7
Three or more (n=32)	26.4	22.5	84.4	**84.4**	90.6
Provider Type†,$^{\theta}$					
Public sector (n=4)	1.6	2.8	75.0	**75.0**	100.0
Private sector only (n=71)	38.9	50.0	76.1	**77.5**	84.5
Both private and public sector (n=64)	54.4	45.1	81.3	**81.3**	89.1

Θ Please refer to Appendix B for detailed information about the collection of information for this variable.

† Indicates that the percentages for this variable may not add up to 100.0% because the information was missing in some cases.

‡ Indicates that this variable corresponds to the data collected at the time of delivery.

Demographic Findings
Because of the small sample size and inherent limitations of the data (Methods, page 11), no statistically significant differences in the UTD by 24 months immunization rates were found within the demographic groups in District 4-0 (Table 4-0-C).

Immunization Administration
Of the 2,763 vaccines doses given to the District 4-0 cohort, 9.2% were given by public providers and 90.8% were given by private providers (Figure 4-0-B).

Figure 4-0-B: Immunizations Administered in: Private vs. Public Sector, District 4-0, 2015 (n= 2,763)

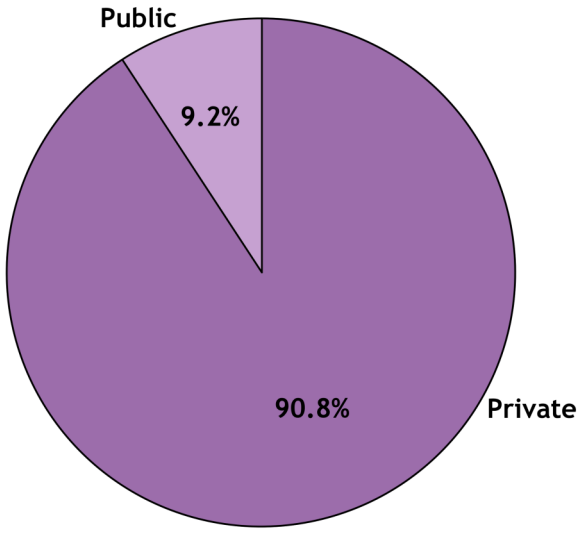


Table 4-0-D: Vaccine Antigen-Specific Immunization Coverage (%) by 24 months of age, District 4-0, 2010-2015

Vaccine Antigen	2011 - 2015	2011	2012	2013	2014	2015
4 DTaP by 24 months		84.2%	89.4%	84.7%	82.8%	79.6%
3 Polio by 24 months		97.1%	97.4%	96.9%	95.5%	94.4%
1 MMR by 24 months		92.4%	96.7%	89.0%	90.4%	88.0%
UTD Hib by 24 months		94.7%	98.7%	97.5%	96.2%	92.3%
3 Hepatitis B by 24 months		97.1%	98.7%	95.7%	96.2%	94.4%
1 Varicella by 24 months		93.0%	98.7%	91.4%	89.8%	89.4%
UTD PCV by 24 months		96.5%	96.0%	84.0%	90.4%	89.3%
2 Rotavirus by 24 months		79.5%	66.2%	84.7%	84.1%	85.2%
1 Influenza by 24 months		57.9%	51.7%	23.9%	68.2%	61.3%
2 Hepatitis A by 24 months		53.8%	62.3%	57.1%	52.2%	52.1%
Hepatitis B birth dose		87.1%	82.8%	89.0%	86.0%	76.8%

Immunization Rates by Vaccine Antigen
In District 4-0, the UTD immunization rates by 24 months for most vaccine antigens decreased (labeled in red) between 2014 and 2015 (Table 4-0-D).

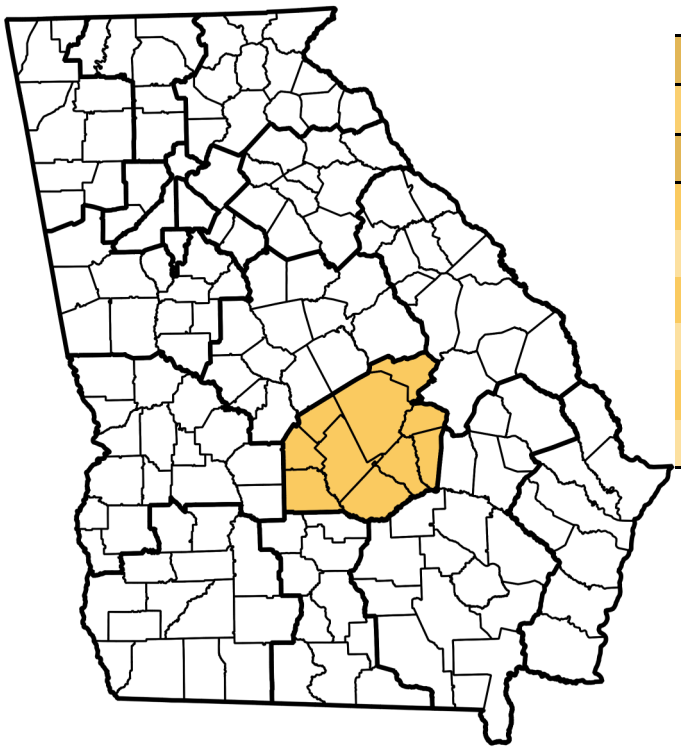
The UTD immunization rates by antigen for all of the 4:3:1:3:3:1:4 series vaccines decreased slightly (less than 5 percentage point difference) from 2014 to 2015.

Notable differences in UTD rate by antigen included Influenza and the Hepatitis B birth dose, which decreased by more than 5 percentage points from 2014 to 2015.

Vaccine Antigen-Specific Conclusions
Antigen-specific data suggest that the DTaP, MMR, Varicella, and PCV vaccines could be the primary focus of District 4-0 and County-level immunization campaigns.

District 5-1

2015 Georgia Immunization Study Report



District 5-1 Data Collection Team	
Patty Portwood, BS, M. Ed	District Immunization Coordinator
Additional Data Collection Staff	
Jina Adams, RN, MSN	Kristen Wilson, RN
Joni R. Wilson, RN	Donna Collins, RN
Terri Griffin, RN, BSN	Suzanne Usher, RN
Brenda Williams, RN	Daisy Haines, RN
Amy Tanner, RN	Debbie Martin, RN, NP
Wanda Moore, RN	Gayle Edney

County	Number in Final Sample
Bleckley	7
Dodge	9
Johnson	5
Laurens	29
Montgomery	4
Pulaski	5
Telfair	5
Treutlen	5
Wheeler	2
Wilcox	1
District 5-1	**72**
District UTD by 24 months Immunization Rate	**87.7%**
State of Georgia	**2,002**
State UTD by 24 months Immunization Rate	**82.7%**

District 5-1

Georgia Immunization Study Report, p2

The 2015 GIS sampled a total of 72 children in District 5-1 (Table 5-1-A).

For the District 5-1 sample, the up-to-date (UTD) immunization rate by 24 months of age (70.8%) was 7.0 percentage points lower than in 2014 (77.8%). The UTD immunization rate based on GRITS alone (70.8%) decreased 3.3 percentage points from 2014 (74.1%). The UTD immunization rate by the end of data collection (91.7%) was 1.6 percentage points higher than in 2014 (90.1%). Immunization rates that decreased are shown in red (Table 5-1-B).

A comparison of GIS immunization rates between District 5-1 and Georgia for the 4:3:1:3:3:1:4 series, from 2005 to 2015, is shown in Figure 5-1-A.

Table 5-1-A: GIS Sampling Scheme, District 5-1, 2015

	District 5-1 (n)	State (n)
Original Sample	77	2,225
Ineligible	3	159
(Refused to Participate)	.	15
Eligible Sample	74	2,066
Unable to Locate†	2	64
Final Sample	72	2,002
Response Rate (%)	97.3	96.9

† Children were classified as "Unable to Locate" if every conceivable effort was made to locate and communicate with the child's guardian and the child's provider was either unknown or also unable to locate the guardian.

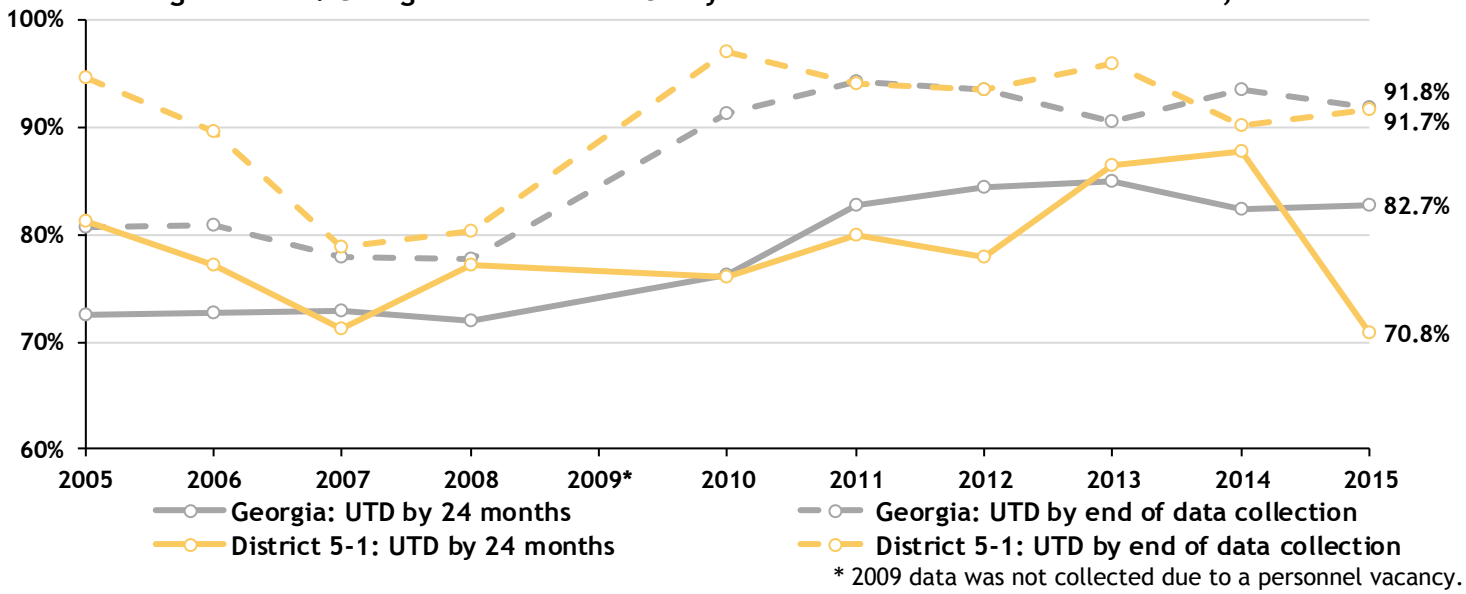
Table 5-1-B: Immunization Summary by Series & Vaccine Antigen, District 5-1, 2015

	District 5-1 (%)	State (%)
UTD immunization rate* **based on GRITS alone**	70.8 ± 10.6	79.7 ± 1.8
UTD immunization rate* **by 24 months**	70.8 ± 10.6	82.7 ± 1.7
UTD immunization rate* **by end of six-month data collection†**	91.7 ± 6.4	91.8 ± 1.2
4 DTaP **by 24 months**	75.0 ± 10.1	84.7 ± 1.6
3 DTaP **by 24 months**	95.8 ± 4.6	95.6 ± 0.9
3 IPV **by 24 months**	93.1 ± 5.9	94.9 ± 1.0
1 MMR **by 24 months**	91.7 ± 6.4	91.2 ± 1.2
UTD Hib **by 24 months**	88.9 ± 7.3	93.9 ± 1.1
3 Hep B **by 24 months**	95.8 ± 4.6	95.9 ± 0.9
1 Varicella **by 24 months**	91.7 ± 6.4	92.0 ± 1.2
UTD PCV **by 24 months**	88.9 ± 7.3	91.1 ± 1.3
2 Rotavirus **by 24 months**	87.5 ± 7.7	87.0 ± 1.5
2 Hep A **by 24 months**	50.0 ± 11.6	58.8 ± 2.2
1+ Influenza **by 24 months**	52.8 ± 11.6	62.1 ± 2.1

† Includes children who become UTD during the data collection period. This number is a testament to the efforts of District staff to reach the children originally listed as pending in their District.

* This rate includes children up-to-date by ACIP-recommended catch-up schedule.

Figure 5-1-A: Georgia Immunization Study and District 5-1 Immunization Rates, 2005-2015



* 2009 data was not collected due to a personnel vacancy.

District 5-1, Georgia Immunization Study Report, p3

Table 5-1-C: District 5-1 Sample Demographics & Immunization Rates, 2015

	Demographics for State and District 5-1 samples		Immunization Rates for District 5-1 Sample		
	Sample of Jan. 2013 births n=2,002 (%)	District 5-1 sample n=72 (%)	UTD based on GRITS alone (%)	UTD by 24 months (%)	UTD by end of data collection (%)
District 5-1 Rates			70.8	**70.8**	91.7
Maternal Race‡,†					
White (n=32)	49.2	44.4	71.9	**71.9**	90.6
Black or African-American (n=35)	34.9	48.6	68.6	**68.6**	91.4
Asian (n=0)	.	.	.	.	.
Multiracial (n=2)	3.6	2.8	50	**50**	100
Maternal Ethnicity‡,†					
Non-Hispanic (n=67)	87.3	93.1	68.7	**68.7**	91
Hispanic (n=5)	12.5	6.9	100	**100**	100
Maternal Age‡,†					
<25 years old (n=32)	39.2	44.4	71.9	**71.9**	93.8
25-34 years old (n=33)	47.8	45.8	69.7	**69.7**	87.9
35+ years old (n=7)	12.8	9.7	71.4	**71.4**	100
Maternal Education‡,†					
Some college or higher (n=24)	46.5	33.3	62.5	**62.5**	91.7
High school graduate/GED (n=29)	31.6	40.3	75.9	**75.9**	93.1
9th - 11th grade (n=12)	13.9	16.7	75	**75**	91.7
<9th grade (n=3)	4	4.2	66.7	**66.7**	66.7
Maternal Marital Status‡					
Married (n=28)	47.4	38.9	75	**75**	96.4
Unmarried (n=42)	51	58.3	66.7	**66.7**	88.1
WIC$^{\theta}$					
Non-WIC (n=31)	43.2	43.1	64.5	**64.5**	83.9
WIC (n=41)	56.8	56.9	75.6	**75.6**	97.6
Number of Providers†,$^{\theta}$					
One (n=4)	20.6	5.6	75	**75**	75
Two (n=44)	47.9	61.1	77.3	**77.3**	93.2
Three or more (n=22)	26.4	30.6	59.1	**59.1**	90.9
Provider Type†,$^{\theta}$					
Public sector only (n=0)	.	.	.	.	.
Private sector only (n=14)	38.9	19.4	78.6	**78.6**	92.9
Both private and public sector (n=56)	54.4	77.8	69.6	**69.6**	91.1

Θ Please refer to Appendix B for detailed information about the collection of information for this variable.

† Indicates that the percentages for this variable may not add up to 100.0% because the information was missing in some cases.

‡ Indicates that this variable corresponds to the data collected at the time of delivery.

Demographic Findings
Because of the small sample size and inherent limitations of the data (Methods, page 11), no statistically significant differences in the UTD by 24 months immunization rates were found within the demographic groups in District 5-1 (Table 5-1-C).

Immunization Administration
Of the 1,373 vaccines doses given to the District 5-1 cohort, 7.5% were given by public providers and 92.5% were given by private providers (Figure 5-1-B).

Figure 5-1-B: Immunizations Administered: Private vs. Public Sector, District 5-1, 2015 (n= 1,373)

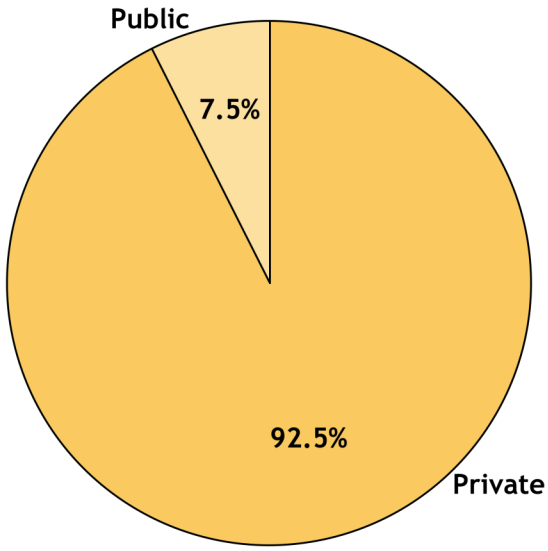


Table 5-1-D: Vaccine Antigen-Specific Immunization Coverage (%) by 24 months of age, District 5-1, 2010-2015

Vaccine Antigen	2011 - 2015	2011	2012	2013	2014	2015
4 DTaP by 24 months		80.0%	79.2%	79.7%	80.2%	75.0%
3 Polio by 24 months		94.0%	92.2%	98.6%	95.1%	93.1%
1 MMR by 24 months		94.0%	85.7%	95.9%	93.8%	91.7%
UTD Hib by 24 months		90.0%	90.9%	98.6%	90.1%	88.9%
3 Hepatitis B by 24 months		98.0%	96.1%	97.3%	95.1%	95.8%
1 Varicella by 24 months		96.0%	87.0%	95.9%	93.8%	91.7%
UTD PCV by 24 months		96.0%	89.6%	81.1%	88.9%	88.9%
2 Rotavirus by 24 months		66.0%	45.5%	70.3%	70.4%	87.5%
1 Influenza by 24 months		44.0%	46.8%	18.9%	44.4%	52.8%
2 Hepatitis A by 24 months		62.0%	54.5%	58.1%	42.0%	50.0%
Hepatitis B birth dose		96.0%	88.3%	89.2%	95.1%	93.1%

Immunization Rates by Vaccine Antigen
In District 5-1, the UTD immunization rates by 24 months for most vaccine antigens decreased (labeled in red) between 2014 and 2015 (Table 5-1-D).

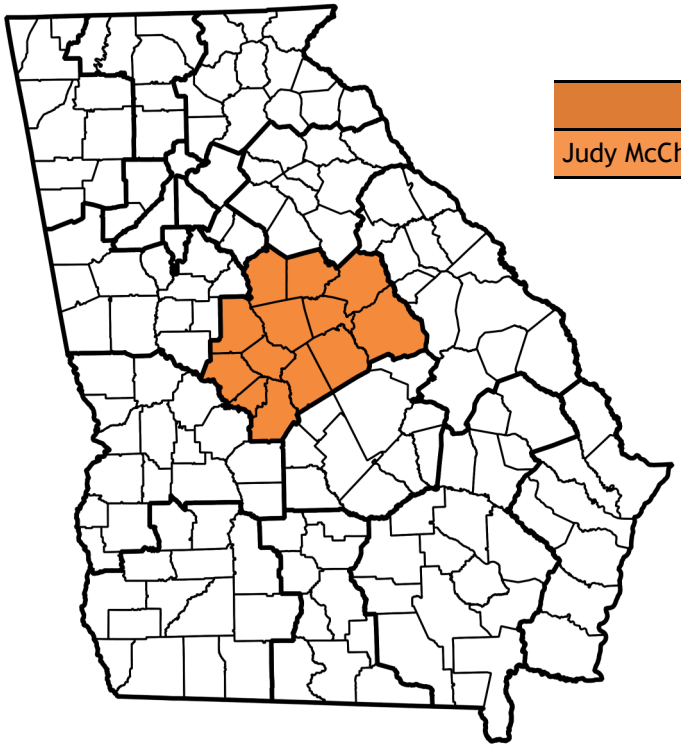
The biggest difference in UTD rates by antigen for the 4:3:1:3:3:1:4 series vaccines was observed in the 4th DTaP dose, which decreased by more than 5 percentage points from 2014 to 2015.

Other notable differences in UTD rates by vaccine antigen included Rotavirus, Influenza and Hepatitis A, which increased by more than 5 percentage points from 2014 to 2015.

Vaccine Antigen-Specific Conclusions
Antigen-specific data suggest that the DTaP, HiB, and PCV vaccines could be the primary focus of District 5-1 and County-level immunization campaigns.

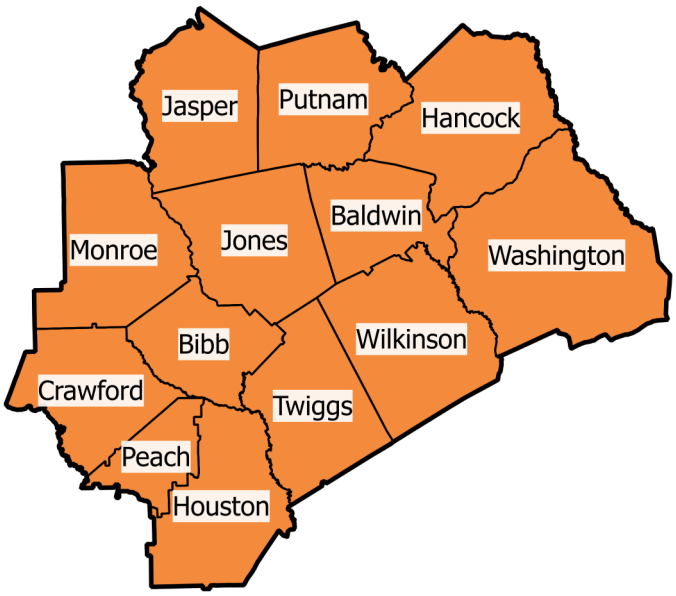
District 5-2

2015 Georgia Immunization Study Report



District 5-2 Data Collection Team	
Judy McChargue, RN	District Immunization Coordinator

County	Number in Final Sample
Baldwin	5
Bibb	33
Crawford	0
Hancock	1
Houston	19
Jasper	3
Jones	2
Monroe	3
Peach	6
Putnam	2
Twiggs	2
Washington	6
Wilkinson	1
District 5-2	**83**
District UTD by 24 months Immunization Rate	**86.7%**
State of Georgia	**2,002**
State UTD by 24 months Immunization Rate	**82.7%**



District 5-2

Georgia Immunization Study Report, p2

The 2015 GIS sampled a total of 83 children in District 5-2 (Table 5-2-A).

For the District 5-2 sample, the up-to-date (UTD) immunization rate by 24 months of age (86.7%) was 1.1 percentage points lower than in 2014 (87.8%). The UTD immunization rate based on GRITS alone (85.5%) increased 22.2 percentage points from 2014 (63.3%). The UTD immunization rate by the end of data collection (94.0%) was 1.9 percentage points lower than in 2014 (95.9%). Immunization rates that decreased are shown in red (Table 5-2-B).

A comparison of GIS immunization rates between District 5-2 and Georgia for the 4:3:1:3:3:1:4 series, from 2005 to 2015, is shown in Figure 5-2-A.

Table 5-2-A: GIS Sampling Scheme, District 5-2, 2015

	District 5-2 (n)	State (n)
Original Sample	84	2,225
Ineligible	.	159
(Refused to Participate)	.	15
Eligible Sample	84	2,066
Unable to Locate†	1	64
Final Sample	83	2,002
Response Rate (%)	98.8	96.9

† Children were classified as "Unable to Locate" if every conceivable effort was made to locate and communicate with the child's guardian and the child's provider was either unknown or also unable to locate the guardian.

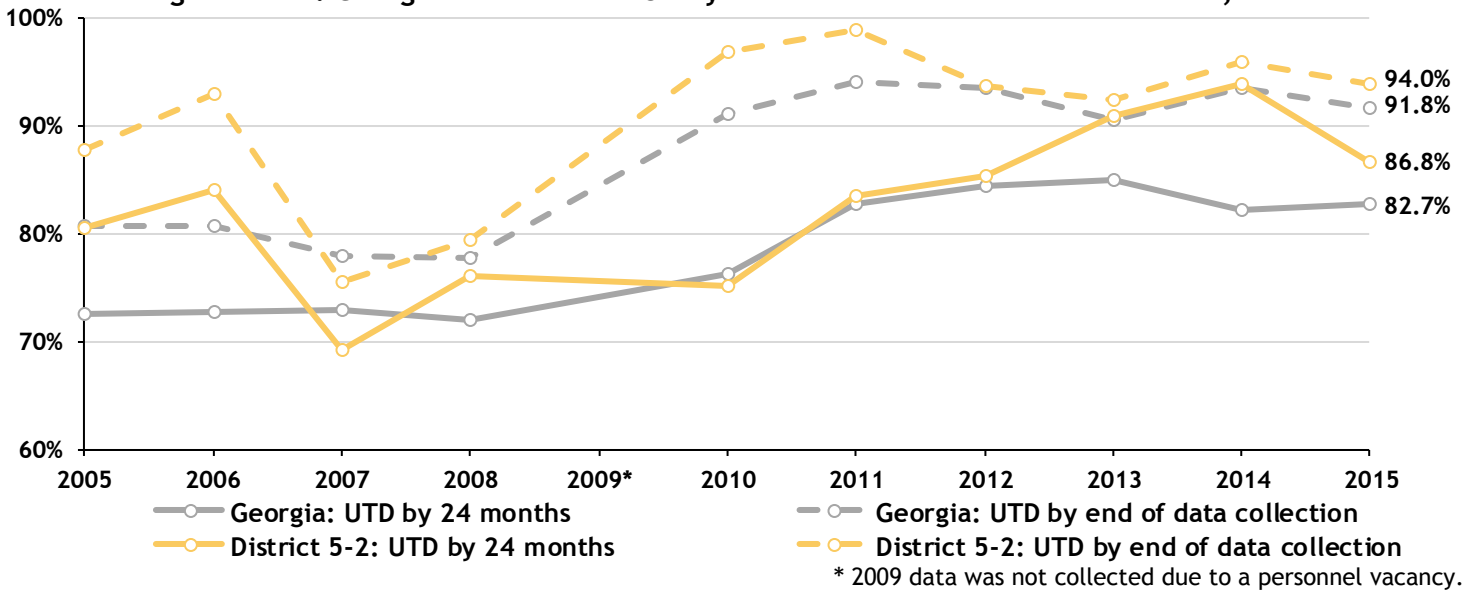
Table 5-2-B: Immunization Summary by Series & Vaccine Antigen, District 5-2, 2015

	District 5-2 (%)	State (%)
UTD immunization rate* **based on GRITS alone**	85.5 ± 7.6	79.7 ± 1.8
UTD immunization rate* **by 24 months**	86.7 ± 7.3	82.7 ± 1.7
UTD immunization rate* **by end of six-month data collection†**	94.0 ± 5.1	91.8 ± 1.2
4 DTaP **by 24 months**	88.0 ± 7.0	84.7 ± 1.6
3 DTaP **by 24 months**	97.6 ± 3.3	95.6 ± 0.9
3 IPV **by 24 months**	97.6 ± 3.3	94.9 ± 1.0
1 MMR **by 24 months**	90.4 ± 6.4	91.2 ± 1.2
UTD Hib **by 24 months**	95.2 ± 4.6	93.9 ± 1.1
3 Hep B **by 24 months**	96.4 ± 4.0	95.9 ± 0.9
1 Varicella **by 24 months**	90.4 ± 6.4	92.0 ± 1.2
UTD PCV **by 24 months**	90.4 ± 6.4	91.1 ± 1.3
2 Rotavirus **by 24 months**	84.3 ± 7.9	87.0 ± 1.5
2 Hep A **by 24 months**	56.6 ± 11	58.8 ± 2.2
1+ Influenza **by 24 months**	61.4 ± 11	62.1 ± 2.1

† Includes children who become UTD during the data collection period. This number is a testament to the efforts of District staff to reach the children originally listed as pending in their District.

* This rate includes children up-to-date by ACIP-recommended catch-up schedule.

Figure 5-2-A: Georgia Immunization Study and District 5-2 Immunization Rates, 2005-2015



* 2009 data was not collected due to a personnel vacancy.

District 5-2, Georgia Immunization Study Report, p3

Table 5-2-C: District 5-2 Sample Demographics & Immunization Rates, 2015

	Demographics for State and District 5-2 samples		Immunization Rates for District 5-2 Sample		
	Sample of Jan. 2013 births n=2,002 (%)	District 5-2 sample n=83 (%)	UTD based on GRITS alone (%)	UTD by 24 months (%)	UTD by end of data collection (%)
District 5-2 Rates			85.5	**86.7**	94.0
Maternal Race‡,†					
White (n=37)	49.2	44.6	89.2	**91.9**	91.9
Black or African-American (n=41)	34.9	49.4	85.4	**85.4**	95.1
Asian (n=2)	2.9	2.4	100.0	**100.0**	100.0
Multiracial (n=2)	3.6	2.4	50.0	**50.0**	100.0
Maternal Ethnicity‡,†					
Non-Hispanic (n=79)	87.3	95.2	86.1	**87.3**	93.7
Hispanic (n=4)	12.5	4.8	75.0	**75.0**	100.0
Maternal Age‡,†					
<25 years old (n=33)	39.2	39.8	87.9	**87.9**	97.0
25-34 years old (n=45)	47.8	54.2	84.4	**86.7**	93.3
35+ years old (n=5)	12.8	6.0	80.0	**80.0**	80.0
Maternal Education‡,†					
Some college or higher (n=32)	46.5	38.6	87.5	**90.6**	90.6
High school graduate/GED (n=31)	31.6	37.3	83.9	**83.9**	93.5
9th - 11th grade (n=17)	13.9	20.5	88.2	**88.2**	100.0
<9th grade (n=1)	4.0	1.2	100.0	**100.0**	100.0
Maternal Marital Status‡					
Married (n=24)	47.4	28.9	87.5	**91.7**	91.7
Unmarried (n=58)	51.0	69.9	84.5	**84.5**	94.8
WIC$^{\theta}$					
Non-WIC (n=37)	43.2	44.6	91.9	**94.6**	97.3
WIC (n=46)	56.8	55.4	80.4	**80.4**	91.3
Number of Providers†,$^{\theta}$					
One (n=5)	20.6	6.0	80.0	**80.0**	80.0
Two (n=54)	47.9	65.1	90.7	**92.6**	96.3
Three or more (n=18)	26.4	21.7	77.8	**77.8**	94.4
Provider Type†,$^{\theta}$					
Public sector (n=0)	.	.	.	.	.
Private sector only (n=19)	38.9	22.9	84.2	**89.5**	89.5
Both private and public sector (n=58)	54.4	69.9	87.9	**87.9**	96.6

Θ Please refer to Appendix B for detailed information about the collection of information for this variable.

† Indicates that the percentages for this variable may not add up to 100.0% because the information was missing in some cases.

‡ Indicates that this variable corresponds to the data collected at the time of delivery.

Demographic Findings
Because of the small sample size and inherent limitations of the data (Methods, page 11), no statistically significant differences in the UTD by 24 months immunization rates were found within the demographic groups in District 5-2 (Table 5-2-C).

Immunization Administration
Of the 1,714 vaccines doses given to the District 5-2 cohort, 4.7% were given by public providers and 95.3% were given by private providers (Figure 5-2-B).

Figure 5-2-B: Immunizations Administered: Private vs. Public Sector, District 5-2, 2015 (n= 1,714)

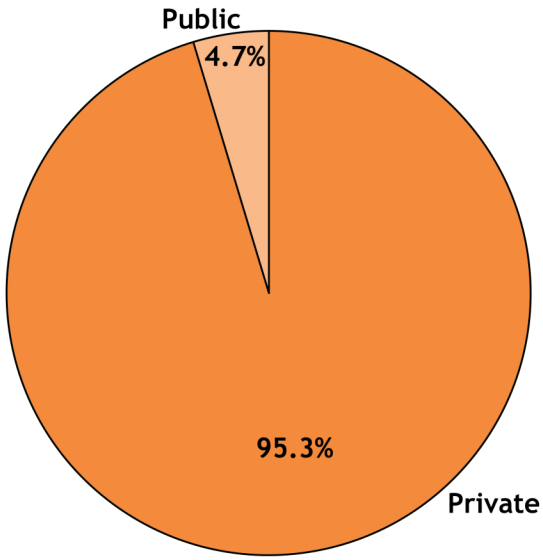


Table 5-2-D: Vaccine Antigen-Specific Immunization Coverage (%) by 24 months of age, District 5-2, 2010-2015

Vaccine Antigen	2011 - 2015	2011	2012	2013	2014	2015
4 DTaP by 24 months		87.6%	86.1%	88.7%	89.8%	88.0%
3 Polio by 24 months		96.9%	95.6%	97.7%	94.9%	97.6%
1 MMR by 24 months		96.9%	93.0%	94.7%	94.9%	90.4%
UTD Hib by 24 months		94.8%	95.6%	97.7%	98.0%	95.2%
3 Hepatitis B by 24 months		97.9%	96.2%	96.2%	96.9%	96.4%
1 Varicella by 24 months		96.9%	94.3%	97.0%	95.9%	90.4%
UTD PCV by 24 months		97.9%	91.8%	91.0%	96.9%	90.4%
2 Rotavirus by 24 months		68.0%	52.5%	64.7%	83.7%	84.3%
1 Influenza by 24 months		53.6%	50.6%	22.6%	62.2%	61.4%
2 Hepatitis A by 24 months		55.7%	57.6%	72.2%	61.2%	56.6%
Hepatitis B birth dose		89.7%	90.5%	91.7%	96.9%	96.4%

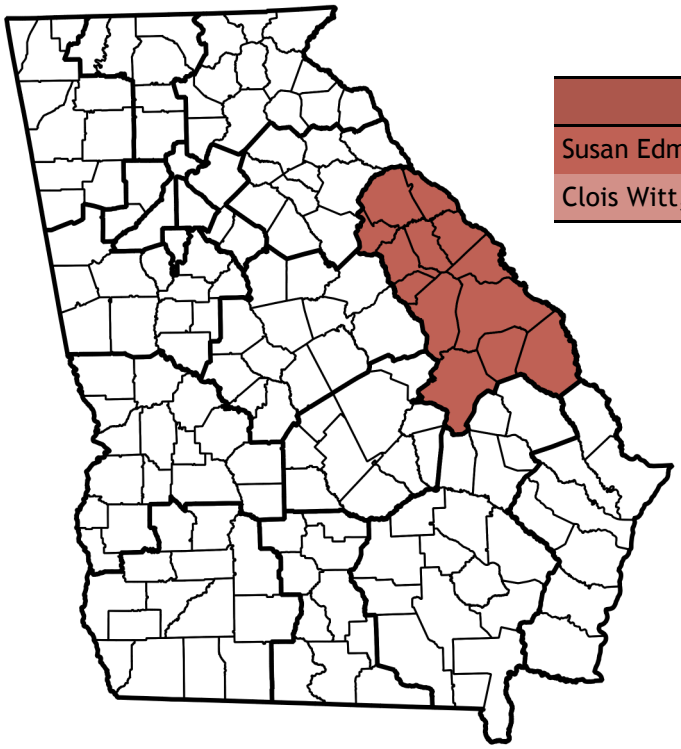
Immunization Rates by Vaccine Antigen
In District 5-2, the UTD immunization rates by 24 months for most vaccine antigens decreased (labeled in red) between 2014 and 2015 (Table 5-2-D).

The biggest difference in UTD rates by antigen for the 4:3:1:3:3:1:4 series vaccines was observed in Varicella and PCV, which decreased by more than 5 percentage points from 2014 to 2015.

Vaccine Antigen-Specific Conclusions
Antigen-specific data suggest that the DTaP, MMR, Varicella and PCV vaccines could be the primary focus of District 5-2 and County-level immunization campaigns.

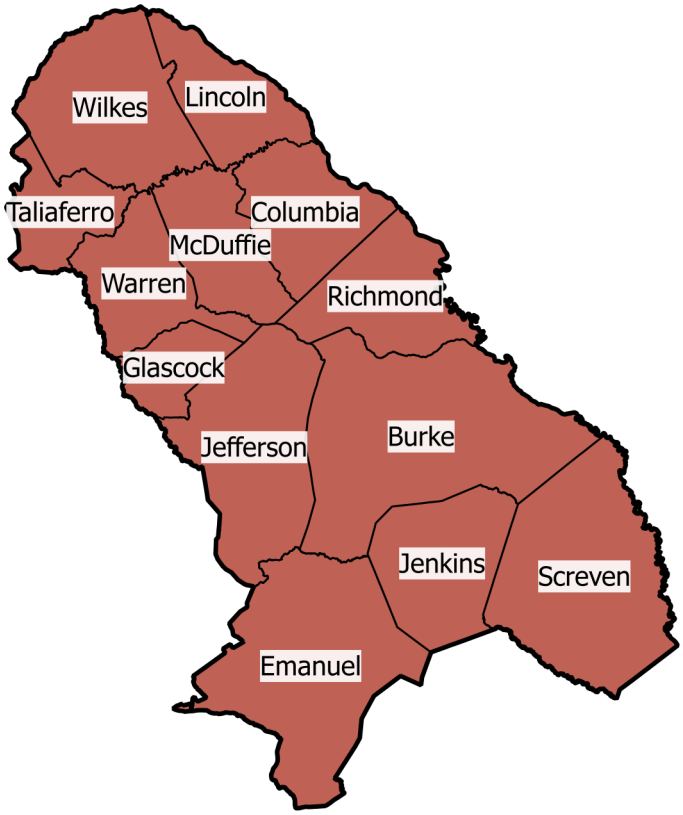
District 6-0

2015 Georgia Immunization Study Report



District 6-0 Data Collection Team	
Susan Edmunds, RN	District Immunization Coordinator
Clois Witt, RN	Primary Data Collector

County	Number in Final Sample
Burke	3
Columbia	18
Emanuel	4
Glascock	0
Jefferson	6
Jenkins	2
Lincoln	0
McDuffie	7
Richmond	42
Screven	1
Taliaferro	1
Warren	2
Wilkes	2
District 6-0	**88**
District UTD by 24 months Immunization Rate	**85.2%**
State of Georgia	**2,002**
State UTD by 24 months Immunization Rate	**82.7%**



District 6-0

Georgia Immunization Study Report, p2

The 2015 GIS sampled a total of 88 children in District 6-0 (Table 6-0-A).

For the District 6-0 sample, the up-to-date (UTD) immunization rate by 24 months of age (85.2%) was 0.2 percentage points lower than in 2014 (85.4%). The UTD immunization rate based on GRITS alone (69.3%) decreased 11.5 percentage points from 2014 (80.8%). The UTD immunization rate by the end of data collection (95.5%) was 0.7 percentage points lower than in 2014 (96.2%). Immunization rates that decreased are shown in red (Table 6-0-B).

A comparison of GIS immunization rates between District 6-0 and Georgia for the 4:3:1:3:3:1:4 series, from 2005 to 2015, is shown in Figure 6-0-A.

Table 6-0-A: GIS Sampling Scheme, District 6-0, 2015

	District 6-0 (n)	State (n)
Original Sample	102	2,225
Ineligible	8	159
(Refused to Participate)	.	15
Eligible Sample	94	2,066
Unable to Locate†	6	64
Final Sample	88	2,002
Response Rate (%)	93.6	96.9

† Children were classified as "Unable to Locate" if every conceivable effort was made to locate and communicate with the child's guardian and the child's provider was either unknown or also unable to locate the guardian.

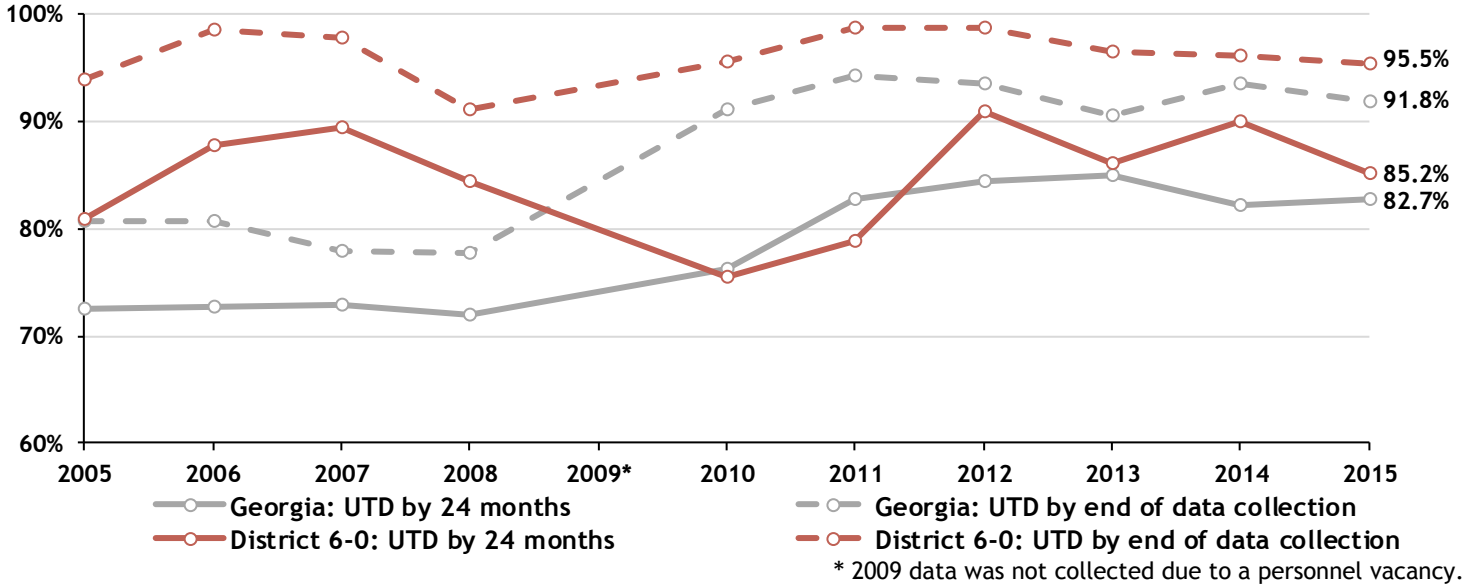
Table 6-0-B: Immunization Summary by Series & Vaccine Antigen, District 6-0, 2015

	District 6-0 (%)	State (%)
UTD immunization rate* **based on GRITS alone**	69.3 ± 9.7	79.7 ± 1.8
UTD immunization rate* **by 24 months**	85.2 ± 7.5	82.7 ± 1.7
UTD immunization rate* **by end of six-month data collection†**	95.5 ± 4.4	91.8 ± 1.2
4 DTaP **by 24 months**	87.5 ± 6.9	84.7 ± 1.6
3 DTaP **by 24 months**	95.5 ± 4.4	95.6 ± 0.9
3 IPV **by 24 months**	95.5 ± 4.4	94.9 ± 1.0
1 MMR **by 24 months**	94.3 ± 4.9	91.2 ± 1.2
UTD Hib **by 24 months**	96.6 ± 3.8	93.9 ± 1.1
3 Hep B **by 24 months**	97.7 ± 3.1	95.9 ± 0.9
1 Varicella **by 24 months**	96.6 ± 3.8	92.0 ± 1.2
UTD PCV **by 24 months**	90.9 ± 6.0	91.1 ± 1.3
2 Rotavirus **by 24 months**	95.5 ± 4.4	87.0 ± 1.5
2 Hep A **by 24 months**	48.9 ± 11	58.8 ± 2.2
1+ Influenza **by 24 months**	64.8 ± 10	62.1 ± 2.1

† Includes children who become UTD during the data collection period. This number is a testament to the efforts of District staff to reach the children originally listed as pending in their District.

* This rate includes children up-to-date by ACIP-recommended catch-up schedule.

Figure 6-0-A: Georgia Immunization Study and District 6-0 Immunization Rates, 2005-2015



* 2009 data was not collected due to a personnel vacancy.

District 6-0, Georgia Immunization Study Report, p3

Table 6-0-C: District 6-0 Sample Demographics & Immunization Rates, 2015

	Demographics for State and District 6-0 samples		Immunization Rates for District 6-0 Sample		
	Sample of Jan. 2013 births n=2,002 (%)	District 6-0 sample n=88 (%)	UTD based on GRITS alone (%)	UTD by 24 months (%)	UTD by end of data collection (%)
District 6-0 Rates			69.3	**85.2**	95.5
Maternal Race‡,†					
White (n=41)	49.2	46.6	78.0	**90.2**	100.0
Black or African-American (n=38)	34.9	43.2	57.9	**76.3**	89.5
Asian (n=2)	2.9	2.3	100.0	**100.0**	100.0
Multiracial (n=2)	3.6	2.3	100.0	**100.0**	100.0
Maternal Ethnicity‡,†					
Non-Hispanic (n=83)	87.3	94.3	68.7	**84.3**	95.2
Hispanic (n=5)	12.5	5.7	80.0	**100.0**	100.0
Maternal Age‡,†					
<25 years old (n=33)	39.2	37.5	60.6	**72.7**	93.9
25-34 years old (n=46)	47.8	52.3	71.7	**91.3**	95.7
35+ years old (n=9)	12.8	10.2	88.9	**100.0**	100.0
Maternal Education‡,†					
Some college or higher (n=40)	46.5	45.5	75.0	**85.0**	97.5
High school graduate/GED (n=23)	31.6	26.1	69.6	**87.0**	91.3
9th - 11th grade (n=19)	13.9	21.6	63.2	**84.2**	94.7
<9th grade (n=2)	4.0	2.3	50.0	**50.0**	100.0
Maternal Marital Status‡					
Married (n=42)	47.4	47.7	73.8	**88.1**	97.6
Unmarried (n=46)	51.0	52.3	65.2	**82.6**	93.5
WIC$^{\theta}$					
Non-WIC (n=36)	43.2	40.9	72.2	**86.1**	97.2
WIC (n=52)	56.8	59.1	67.3	**84.6**	94.2
Number of Providers†,$^{\theta}$					
One (n=32)	20.6	36.4	71.9	**81.3**	90.6
Two (n=45)	47.9	51.1	75.6	**88.9**	97.8
Three or more (n=9)	26.4	10.2	33.3	**77.8**	100.0
Provider Type†,$^{\theta}$					
Public sector (n=2)	1.6	2.3	50.0	**100.0**	100.0
Private sector only (n=47)	38.9	53.4	66.0	**83.0**	93.6
Both private and public sector (n=37)	54.4	42.0	75.7	**86.5**	97.3

Θ Please refer to Appendix B for detailed information about the collection of information for this variable.

† Indicates that the percentages for this variable may not add up to 100.0% because the information was missing in some cases.

‡ Indicates that this variable corresponds to the data collected at the time of delivery.

Demographic Findings
In spite of the small sample size and inherent limitations of the data (Methods, page 11), the District 6-0 results suggest that the following groups were the least often up-to-date on their immunizations by 24 months of age:

- Children of mothers less than 25 years old

Immunization Administration
Of the 1,781 vaccines doses given to the District 6-0 cohort, 5.4% were given by public providers and 94.6% were given by private providers (Figure 6-0-B).

Figure 6-0-B: Immunizations Administered: Private vs. Public Sector, District 6-0, 2015 (n= 1,781)

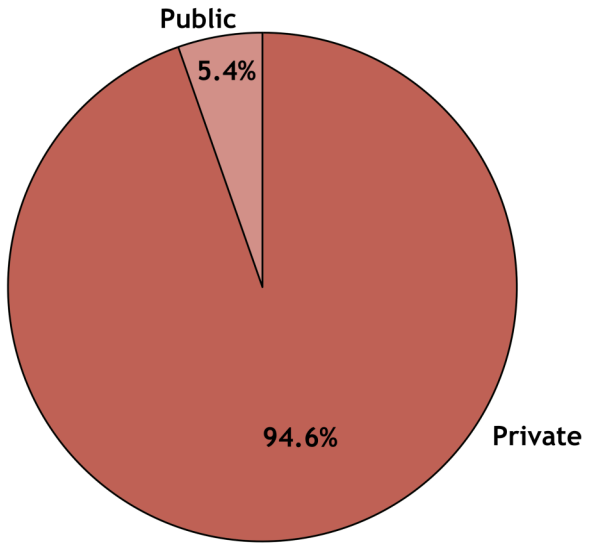


Table 6-0-D: Vaccine Antigen-Specific Immunization Coverage (%) by 24 months of age, District 6-0, 2010-2015

Vaccine Antigen	2011 - 2015	2011	2012	2013	2014	2015
4 DTaP by 24 months		80.0%	84.3%	84.8%	87.7%	87.5%
3 Polio by 24 months		97.6%	95.6%	97.9%	96.9%	95.5%
1 MMR by 24 months		91.8%	89.9%	97.9%	92.3%	94.3%
UTD Hib by 24 months		95.3%	93.7%	95.9%	97.7%	96.6%
3 Hepatitis B by 24 months		98.8%	93.7%	98.6%	97.7%	97.8%
1 Varicella by 24 months		94.1%	91.8%	97.2%	94.6%	96.6%
UTD PCV by 24 months		98.8%	88.1%	83.4%	91.5%	90.9%
2 Rotavirus by 24 months		75.3%	62.9%	82.8%	90.0%	95.5%
1 Influenza by 24 months		61.2%	52.2%	23.4%	72.3%	64.8%
2 Hepatitis A by 24 months		52.9%	47.8%	52.4%	49.2%	48.9%
Hepatitis B birth dose		92.9%	83.6%	88.3%	84.6%	78.4%

Immunization Rates by Vaccine Antigen
In District 6-0, the UTD immunization rates by 24 months for most vaccine antigens decreased (labeled in red) between 2014 and 2015 (Table 6-0-D).

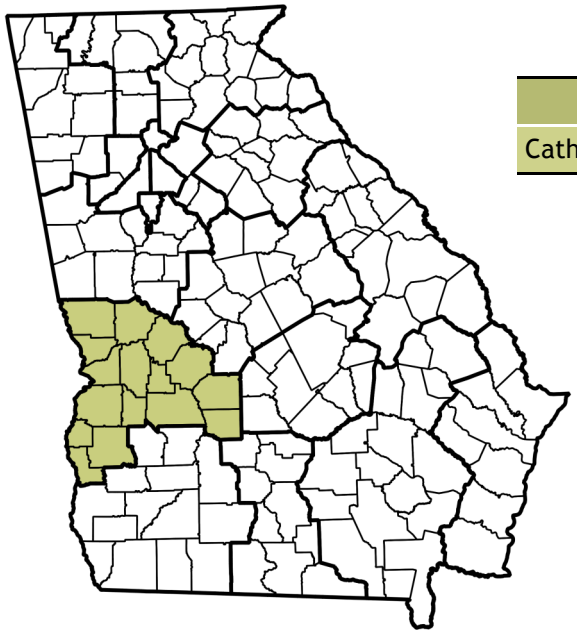
The UTD immunization rates by antigen for most of the 4:3:1:3:3:1:4 series vaccines decreased slightly (less than 5 percentage point difference), except for MMR, Hepatitis B and Varicella, which increased slightly from 2014 to 2015.

Notable differences in UTD rates by antigen included Influenza and the Hepatitis B birth dose, which decreased by more than 5 percentage points from 2014 to 2015.

Vaccine Antigen-Specific Conclusions
Antigen-specific data suggest that the DTaP and PCV vaccines could be the primary focus of District 6-0 and County-level immunization campaigns.

District 7-0

2015 Georgia Immunization Study Report



District 7-0 Data Collection Team	
Cathy Henderson, RN	District Immunization Coordinator

County	Number in Final Sample
Chattahoochee	0
Clay	2
Crisp	9
Dooly	1
Harris	3
Macon	4
Marion	3
Muscogee	82
Quitman	0
Randolph	2
Schley	0
Stewart	0
Sumter	16
Talbot	1
Taylor	6
Webster	0
District 7-0	**129**
District UTD by 24 months Immunization Rate	**85.3%**
State of Georgia	**2,002**
State UTD by 24 months Immunization Rate	**82.7%**

District 7-0

Georgia Immunization Study Report, p2

The 2015 GIS sampled a total of 129 children in District 7-0 (Table 7-0-A).

For the District 7-0 sample, the up-to-date (UTD) immunization rate by 24 months of age (85.3%) was 12.6 percentage points higher than in 2014 (72.7%). The UTD immunization rate based on GRITS alone (77.5%) increased 10.8 percentage points from 2014 (66.7%). The UTD immunization rate by the end of data collection (95.3%) was 3.4 percentage points higher than in 2014 (91.9%). Immunization rates that decreased are shown in red (Table 7-0-B).

A comparison of GIS immunization rates between District 7-0 and Georgia for the 4:3:1:3:3:1:4 series, from 2005 to 2015, is shown in Figure 7-0-A.

Table 7-0-A: GIS Sampling Scheme, District 7-0, 2015

	District 7-0 (n)	State (n)
Original Sample	148	2,225
Ineligible	17	159
(Refused to Participate)	3	15
Eligible Sample	131	2,066
Unable to Locate†	2	64
Final Sample	129	2,002
Response Rate (%)	98.5	96.9

† Children were classified as "Unable to Locate" if every conceivable effort was made to locate and communicate with the child's guardian and the child's provider was either unknown or also unable to locate the guardian.

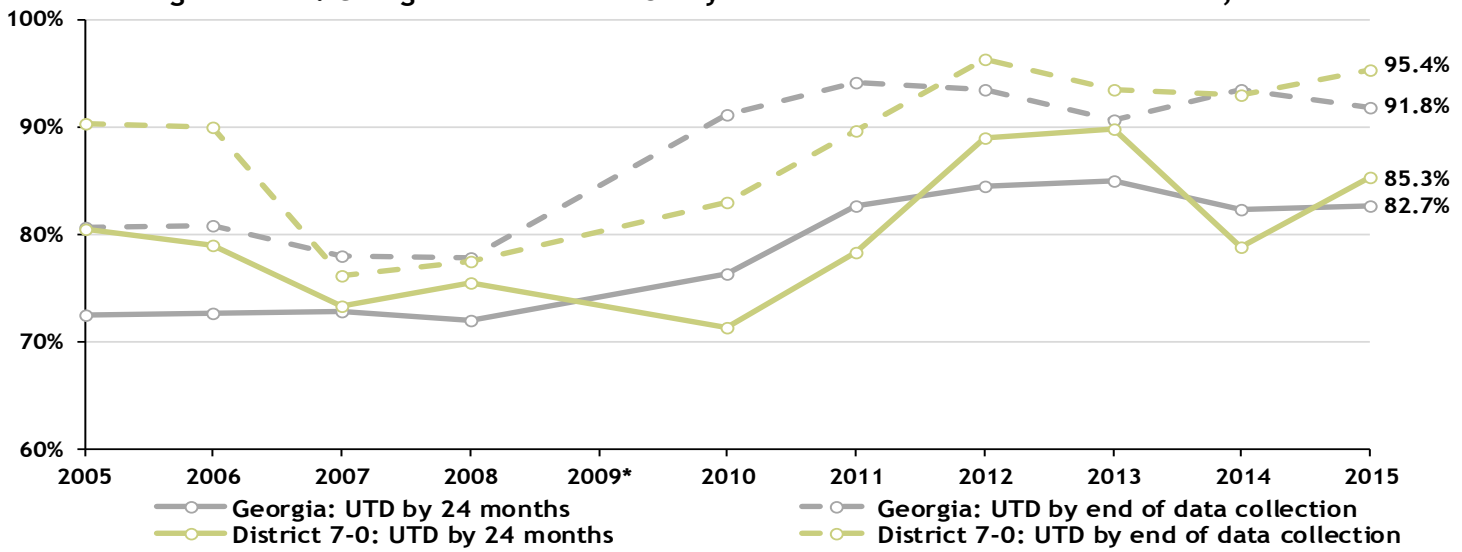
Table 7-0-B: Immunization Summary by Series & Vaccine Antigen, District 7-0, 2015

	District 7-0 (%)	State (%)
UTD immunization rate* **based on GRITS alone**	77.5 ± 7.2	79.7 ± 1.8
UTD immunization rate* **by 24 months**	85.3 ± 6.1	82.7 ± 1.7
UTD immunization rate* **by end of six-month data collection†**	95.3 ± 3.6	91.8 ± 1.2
4 DTaP **by 24 months**	87.6 ± 5.7	84.7 ± 1.6
3 DTaP **by 24 months**	97.7 ± 2.6	95.6 ± 0.9
3 IPV **by 24 months**	96.9 ± 3.0	94.9 ± 1.0
1 MMR **by 24 months**	92.2 ± 4.6	91.2 ± 1.2
UTD Hib **by 24 months**	97.7 ± 2.6	93.9 ± 1.1
3 Hep B **by 24 months**	96.9 ± 3.0	95.9 ± 0.9
1 Varicella **by 24 months**	93.0 ± 4.4	92.0 ± 1.2
UTD PCV **by 24 months**	93.8 ± 4.2	91.1 ± 1.3
2 Rotavirus **by 24 months**	88.4 ± 5.6	87.0 ± 1.5
2 Hep A **by 24 months**	66.7 ± 8.2	58.8 ± 2.2
1+ Influenza **by 24 months**	65.1 ± 8.3	62.1 ± 2.1

† Includes children who become UTD during the data collection period. This number is a testament to the efforts of District staff to reach the children originally listed as pending in their District.

* This rate includes children up-to-date by ACIP-recommended catch-up schedule.

Figure 7-0-A: Georgia Immunization Study and District 7-0 Immunization Rates, 2005-2015



* 2009 data was not collected due to a personnel vacancy.

District 7-0, Georgia Immunization Study Report, p3

Table 7-0-C: District 7-0 Sample Demographics & Immunization Rates, 2015

	Demographics for State and District 7-0 samples		Immunization Rates for District 7-0 Sample		
	Sample of Jan. 2013 births n=2,002 (%)	District 7-0 sample n=129 (%)	UTD based on GRITS alone (%)	UTD by 24 months (%)	UTD by end of data collection (%)
District 7-0 Rates			77.5	**85.3**	95.3
Maternal Race‡,†					
White (n=39)	49.2	30.2	69.2	**84.6**	97.4
Black or African-American (n=74)	34.9	57.4	81.1	**85.1**	95.9
Asian (n=3)	2.9	2.3	66.7	**100.0**	100.0
Multiracial (n=8)	3.6	6.2	87.5	**87.5**	87.5
Maternal Ethnicity‡,†					
Non-Hispanic (n=125)	87.3	96.9	78.4	**86.4**	96.8
Hispanic (n=4)	12.5	3.1	50.0	**50.0**	50.0
Maternal Age‡,†					
<25 years old (n=56)	39.2	43.4	75.0	**78.6**	92.9
25-34 years old (n=59)	47.8	45.7	78.0	**88.1**	96.6
35+ years old (n=14)	12.8	10.9	85.7	**100.0**	100.0
Maternal Education‡,†					
Some college or higher (n=59)	46.5	45.7	83.1	**89.8**	94.9
High school graduate/GED (n=43)	31.6	33.3	67.4	**79.1**	97.7
9th - 11th grade (n=19)	13.9	14.7	84.2	**89.5**	94.7
<9th grade (n=1)	4.0	0.8	100.0	**100.0**	100.0
Maternal Marital Status‡					
Married (n=46)	47.4	35.7	82.6	**93.5**	97.8
Unmarried (n=78)	51.0	60.5	74.4	**80.8**	93.6
WIC$^{\theta}$					
Non-WIC (n=38)	43.2	29.5	73.7	**89.5**	97.4
WIC (n=91)	56.8	70.5	79.1	**83.5**	94.5
Number of Providers†,$^{\theta}$					
One (n=12)	20.6	9.3	83.3	**91.7**	100.0
Two (n=67)	47.9	51.9	79.1	**86.6**	92.5
Three or more (n=45)	26.4	34.9	71.1	**80.0**	97.8
Provider Type†,$^{\theta}$					
Public sector (n=3)	1.6	2.3	33.3	**66.7**	100.0
Private sector only (n=26)	38.9	20.2	80.8	**88.5**	96.2
Both private and public sector (n=95)	54.4	73.6	76.8	**84.2**	94.7

Θ Please refer to Appendix B for detailed information about the collection of information for this variable.

† Indicates that the percentages for this variable may not add up to 100.0% because the information was missing in some cases.

‡ Indicates that this variable corresponds to the data collected at the time of delivery.

Demographic Findings
Because of the small sample size and inherent limitations of the data (Methods, page 11), no statistically significant differences in the UTD by 24 months immunization rates were found within the demographic groups in District 7-0 (Table 7-0-C).

Immunization Administration
Of the 2,697 vaccines doses given to the District 7-0 cohort, 10.0% were given by public providers and 90.0% were given by private providers (Figure 7-0-B).

Figure 7-0-B: Immunizations Administered: Private vs. Public Sector, District 7-0, 2015 (n= 2,697)

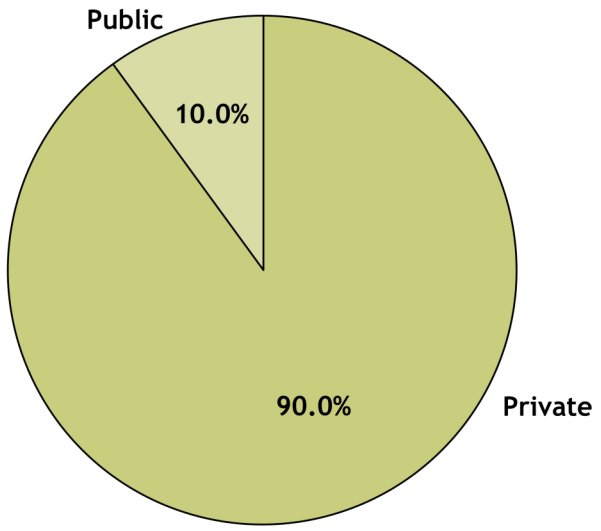


Table 7-0-D: Vaccine Antigen-Specific Immunization Coverage (%) by 24 months of age, District 7-0, 2010-2015

Vaccine Antigen	2011 - 2015	2011	2012	2013	2014	2015
4 DTaP by 24 months		80.9%	93.6%	90.7%	75.8%	87.6%
3 Polio by 24 months		95.7%	98.7%	97.2%	97.0%	96.9%
1 MMR by 24 months		92.2%	96.8%	93.5%	89.9%	92.2%
UTD Hib by 24 months		94.8%	98.7%	97.2%	97.0%	97.7%
3 Hepatitis B by 24 months		98.3%	99.4%	98.1%	98.0%	96.9%
1 Varicella by 24 months		93.0%	96.2%	92.6%	89.9%	93.0%
UTD PCV by 24 months		95.7%	95.5%	88.0%	89.9%	93.8%
2 Rotavirus by 24 months		83.5%	65.4%	85.2%	88.9%	88.4%
1 Influenza by 24 months		60.0%	59.0%	21.3%	58.6%	65.1%
2 Hepatitis A by 24 months		47.0%	63.5%	50.9%	59.6%	66.7%
Hepatitis B birth dose		93.9%	94.2%	92.6%	98.0%	94.6%

Immunization Rates by Vaccine Antigen
In District 7-0, the UTD immunization rates by 24 months for most vaccine antigens increased between 2014 and 2015 (Table 7-0-D).

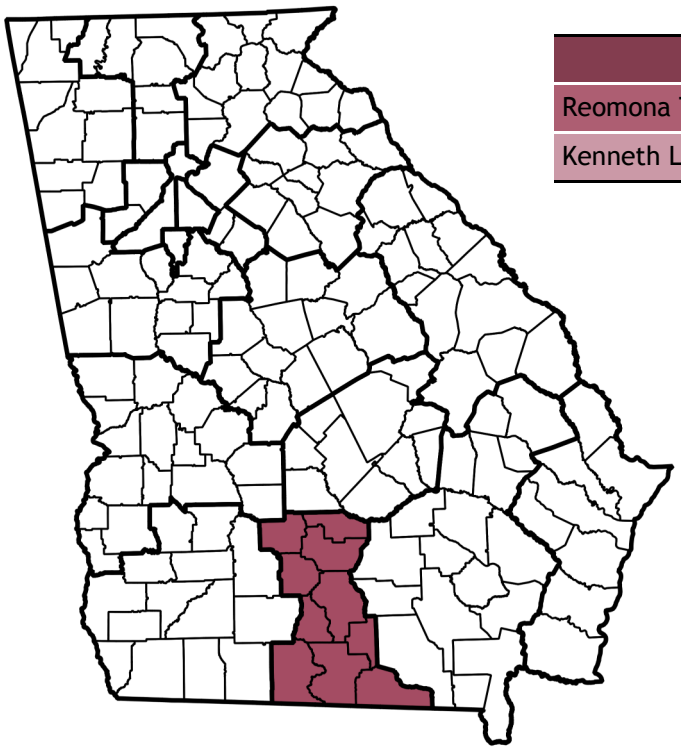
The biggest difference in UTD rates by antigen for the 4:3:1:3:3:1:4 series vaccines was observed in the fourth DTaP dose, which increased by more than 5 percentage points from 2014 to 2015.

Other notable differences in UTD rates by antigen included Influenza and Hepatitis A, which each increased by more than 5 percentage points from 2014 to 2015.

Vaccine Antigen-Specific Conclusions
Antigen-specific data suggest that the fourth DTaP vaccine could be the primary focus of District 7-0 and County-level immunization campaigns.

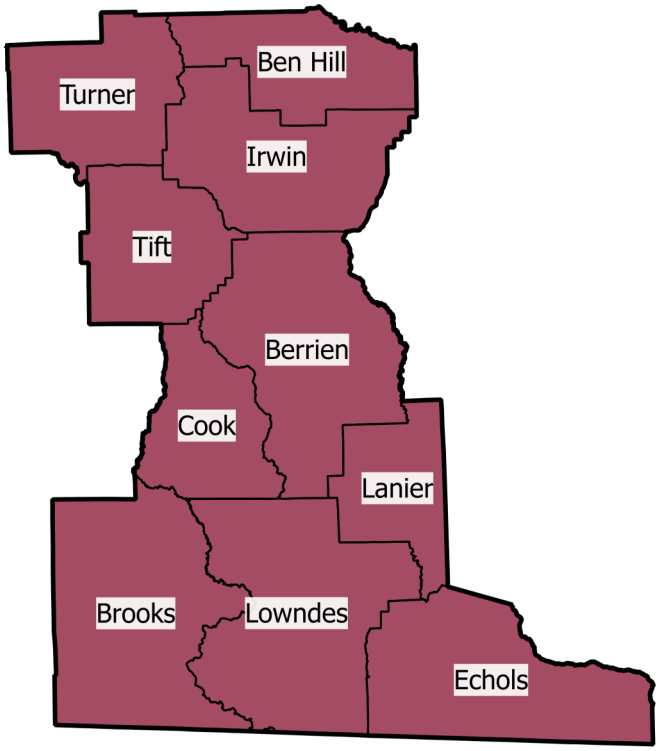
District 8-1

2015 Georgia Immunization Study Report



District 8-1 Data Collection Team	
Reomona Thomas, RN, MSN	District Immunization Coordinator
Kenneth Lowery	District Epidemiologist

County	Number in Final Sample
Ben Hill	7
Berrien	8
Brooks	2
Cook	8
Echols	0
Irwin	2
Lanier	3
Lowndes	52
Tift	20
Turner	4
District 8-1	**106**
District UTD by 24 months Immunization Rate	**89.6%**
State of Georgia	**2,002**
State UTD by 24 months Immunization Rate	**82.7%**



District 8-1

Georgia Immunization Study Report, p2

The 2015 GIS sampled a total of 106 children in District 8-1 (Table 8-1-A).

For the District 8-1 sample, the up-to-date (UTD) immunization rate by 24 months of age (89.6%) was 7.4 percentage points higher than in 2014 (82.2%). The UTD immunization rate based on GRITS alone (89.6%) increased 10.4 percentage points from 2014 (79.2%). The UTD immunization rate by the end of data collection (96.2%) was 0.8 percentage points lower than in 2014 (97.0%). Immunization rates that decreased are shown in red (Table 8-1-B).

A comparison of GIS immunization rates between District 8-1 and Georgia for the 4:3:1:3:3:1:4 series, from 2005 to 2015, is shown in Figure 8-1-A.

Table 8-1-A: GIS Sampling Scheme, District 8-1, 2015

	District 8-1 (n)	State (n)
Original Sample	115	2,225
Ineligible	3	159
(Refused to Participate)	.	15
Eligible Sample	112	2,066
Unable to Locate†	6	64
Final Sample	106	2,002
Response Rate (%)	94.6	96.9

† Children were classified as "Unable to Locate" if every conceivable effort was made to locate and communicate with the child's guardian and the child's provider was either unknown or also unable to locate the guardian.

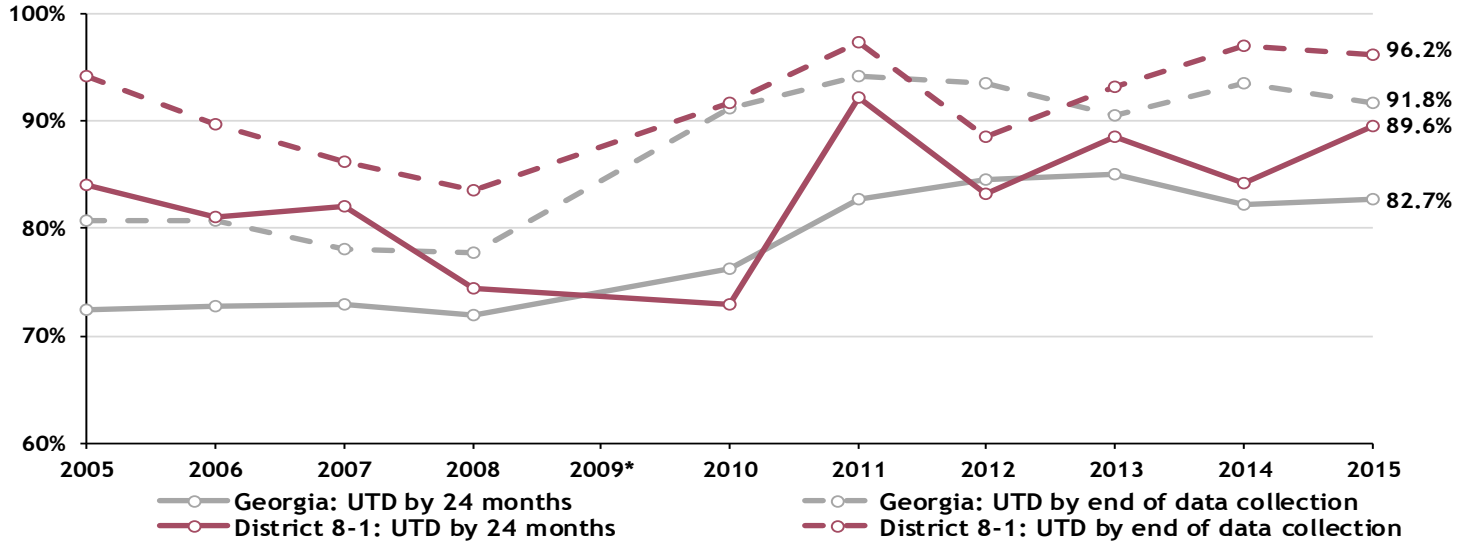
Table 8-1-B: Immunization Summary by Series & Vaccine Antigen, District 8-1, 2015

	District 8-1 (%)	State (%)
UTD immunization rate* **based on GRITS alone**	89.6 ± 5.8	79.7 ± 1.8
UTD immunization rate* **by 24 months**	89.6 ± 5.8	82.7 ± 1.7
UTD immunization rate* **by end of six-month data collection†**	96.2 ± 3.6	91.8 ± 1.2
4 DTaP **by 24 months**	92.5 ± 5.1	84.7 ± 1.6
3 DTaP **by 24 months**	98.1 ± 2.6	95.6 ± 0.9
3 IPV **by 24 months**	98.1 ± 2.6	94.9 ± 1.0
1 MMR **by 24 months**	95.3 ± 4.1	91.2 ± 1.2
UTD Hib **by 24 months**	96.2 ± 3.6	93.9 ± 1.1
3 Hep B **by 24 months**	99.1 ± 1.8	95.9 ± 0.9
1 Varicella **by 24 months**	96.2 ± 3.6	92.0 ± 1.2
UTD PCV **by 24 months**	95.3 ± 4.1	91.1 ± 1.3
2 Rotavirus **by 24 months**	89.6 ± 5.8	87.0 ± 1.5
2 Hep A **by 24 months**	65.1 ± 9.1	58.8 ± 2.2
1+ Influenza **by 24 months**	64.2 ± 9.2	62.1 ± 2.1

† Includes children who become UTD during the data collection period. This number is a testament to the efforts of District staff to reach the children originally listed as pending in their District.

* This rate includes children up-to-date by ACIP-recommended catch-up schedule.

Figure 8-1-A: Georgia Immunization Study and District 8-1 Immunization Rates, 2005-2015



* 2009 data was not collected due to a personnel vacancy.

District 8-1, Georgia Immunization Study Report, p3

Table 8-1-C: District 8-1 Sample Demographics & Immunization Rates, 2015					
	Demographics for State and District 8-1 samples		Immunization Rates for District 8-1 Sample		
	Sample of Jan. 2013 births n=2,002 (%)	District 8-1 sample n=106 (%)	UTD based on GRITS alone (%)	UTD by 24 months (%)	UTD by end of data collection (%)
District 8-1 Rates			89.6	**89.6**	96.2
Maternal Race‡,†					
White (n=60)	49.2	56.6	93.3	**93.3**	96.7
Black or African-American (n=39)	34.9	36.8	84.6	**84.6**	94.9
Asian (n=0)	.	.		.	.
Multiracial (n=1)	3.6	0.9	100.0	**100.0**	100.0
Maternal Ethnicity‡,†					
Non-Hispanic (n=98)	87.3	92.5	89.8	**89.8**	95.9
Hispanic (n=7)	12.5	6.6	100.0	**100.0**	100.0
Maternal Age‡,†					
<25 years old (n=58)	39.2	54.7	87.9	**87.9**	96.6
25-34 years old (n=39)	47.8	36.8	92.3	**92.3**	94.9
35+ years old (n=8)	12.8	7.5	100.0	**100.0**	100.0
Maternal Education‡,†					
Some college or higher (n=40)	46.5	37.7	92.5	**92.5**	97.5
High school graduate/GED (n=46)	31.6	43.4	91.3	**91.3**	97.8
9th - 11th grade (n=17)	13.9	16.0	82.4	**82.4**	88.2
<9th grade (n=2)	4.0	1.9	100.0	**100.0**	100.0
Maternal Marital Status‡					
Married (n=44)	47.4	41.5	95.5	**95.5**	100.0
Unmarried (n=58)	51.0	54.7	86.2	**86.2**	93.1
WIC$^{\theta}$					
Non-WIC (n=31)	43.2	29.2	93.5	**93.5**	100.0
WIC (n=75)	56.8	70.8	88.0	**88.0**	94.7
Number of Providers†,$^{\theta}$					
One (n=21)	20.6	19.8	85.7	**85.7**	95.2
Two (n=47)	47.9	44.3	89.4	**89.4**	95.7
Three or more (n=34)	26.4	32.1	97.1	**97.1**	100.0
Provider Type†,$^{\theta}$					
Public sector (n=2)	1.6	1.9	100.0	**100.0**	100.0
Private sector only (n=33)	38.9	31.1	90.9	**90.9**	97.0
Both private and public sector (n=67)	54.4	63.2	91.0	**91.0**	97.0

Θ Please refer to Appendix B for detailed information about the collection of information for this variable.

† Indicates that the percentages for this variable may not add up to 100.0% because the information was missing in some cases.

‡ Indicates that this variable corresponds to the data collected at the time of delivery.

Demographic Findings
Because of the small sample size and inherent limitations of the data (Methods, page 11), no statistically significant differences in the UTD by 24 months immunization rates were found within the demographic groups in District 8-1 (Table 8-1-C).

Immunization Administration
Of the 2,133 vaccines doses given to the District 8-1 cohort, 7.7% were given by public providers and 92.3% were given by private providers (Figure 8-1-B).

Figure 8-1-B: Immunizations Administered: Private vs. Public Sector, District 8-1, 2015 (n= 2,133)

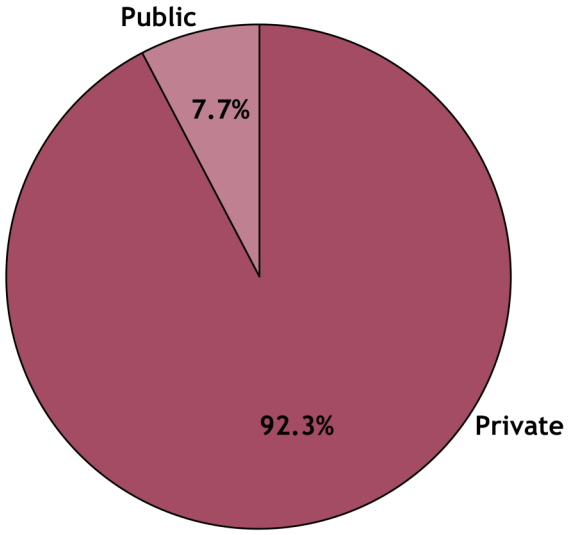


Table 8-1-D: Vaccine Antigen-Specific Immunization Coverage (%) by 24 months of age, District 8-1, 2010-2015

Vaccine Antigen	2011 - 2015	2011	2012	2013	2014	2015
4 DTaP by 24 months		94.8%	90.1%	86.5%	85.1%	92.5%
3 Polio by 24 months		97.4%	98.8%	96.2%	98.0%	98.1%
1 MMR by 24 months		96.1%	95.1%	93.3%	93.1%	95.3%
UTD Hib by 24 months		96.1%	95.1%	96.2%	99.0%	96.2%
3 Hepatitis B by 24 months		96.1%	98.8%	97.1%	98.0%	99.1%
1 Varicella by 24 months		94.8%	97.5%	92.3%	94.1%	96.2%
UTD PCV by 24 months		97.4%	98.8%	91.3%	89.1%	95.3%
2 Rotavirus by 24 months		92.2%	84.0%	95.2%	93.1%	89.6%
1 Influenza by 24 months		61.0%	58.0%	20.2%	68.3%	64.2%
2 Hepatitis A by 24 months		74.0%	64.2%	58.7%	55.4%	65.1%
Hepatitis B birth dose		92.2%	91.4%	92.3%	92.1%	92.5%

Immunization Rates by Vaccine Antigen
In District 8-1, the UTD immunization rates by 24 months for most vaccine antigens increased between 2014 and 2015 (Table 8-1-D).

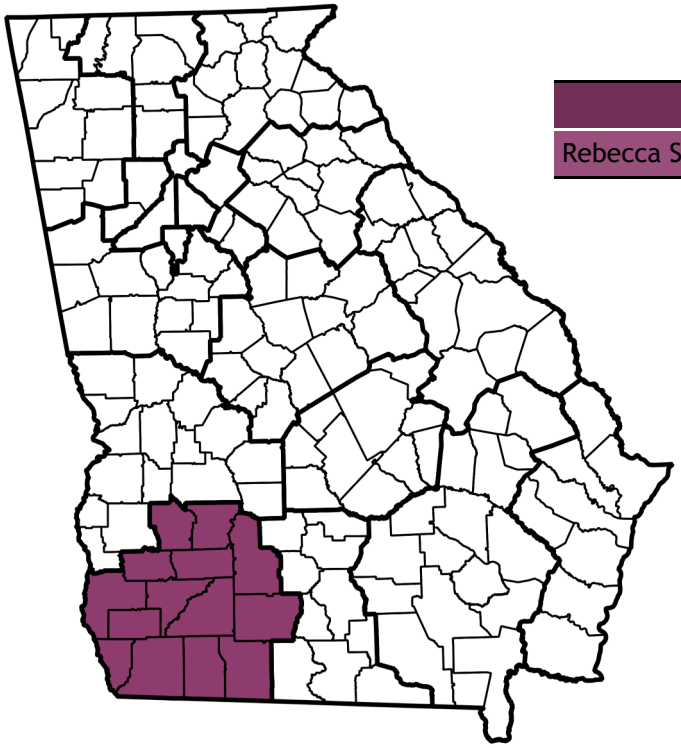
The biggest difference in UTD rates by antigen for the 4:3:1:3:3:1:4 series vaccines was observed in the fourth DTaP dose and PCV, which each increased by more than 5 percentage points from 2014 to 2015.

Other notable differences in UTD rates by antigen included Hepatitis A, which each increased by more than 5 percentage points from 2014 to 2015.

Vaccine Antigen-Specific Conclusions
Antigen-specific data suggest that the Rotavirus, Influenza and Hepatitis A vaccines could be the primary focus of District 8-1 and County-level immunization campaigns.

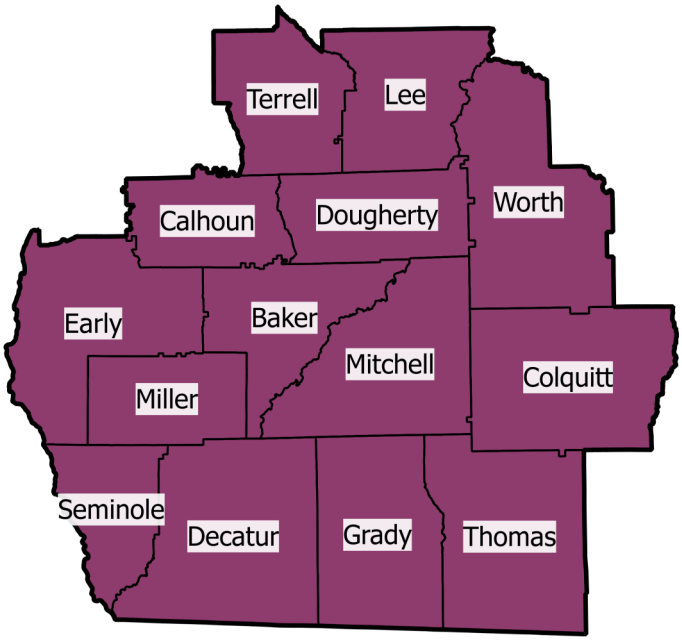
District 8-2

2015 Georgia Immunization Study Report



District 8-2 Data Collection Team	
Rebecca Snow, LPN	District Immunization Coordinator

County	Number in Final Sample
Baker	0
Calhoun	1
Colquitt	4
Decatur	5
Dougherty	40
Early	3
Grady	3
Lee	4
Miller	1
Mitchell	5
Seminole	1
Terrell	1
Thomas	14
Worth	5
District 8-2	**87**
District UTD by 24 months Immunization Rate	**97.4%**
State of Georgia	**2,002**
State UTD by 24 months Immunization Rate	**82.7%**



District 8-2

Georgia Immunization Study Report, p2

The 2015 GIS sampled a total of 87 children in District 8-2 (Table 8-2-A).

For the District 8-2 sample, the up-to-date (UTD) immunization rate by 24 months of age (87.4%) was 2.4 percentage points higher than in 2014 (85.1%). The UTD immunization rate based on GRITS alone (86.2%) increased 4.0 percentage points from 2014 (82.2%). The UTD immunization rate by the end of data collection (95.4%) was 0.1 percentage points higher than in 2014 (95.3%). Immunization rates that decreased are shown in red (Table 8-2-B).

A comparison of GIS immunization rates between District 8-2 and Georgia for the 4:3:1:3:3:1:4 series, from 2005 to 2015, is shown in Figure 8-2-A.

Table 8-2-A: GIS Sampling Scheme, District 8-2, 2015

	District 8-2 (n)	State (n)
Original Sample	94	2,225
Ineligible	5	159
(Refused to Participate)	.	15
Eligible Sample	89	2,066
Unable to Locate†	2	64
Final Sample	87	2,002
Response Rate (%)	97.8	96.9

† Children were classified as "Unable to Locate" if every conceivable effort was made to locate and communicate with the child's guardian and the child's provider was either unknown or also unable to locate the guardian.

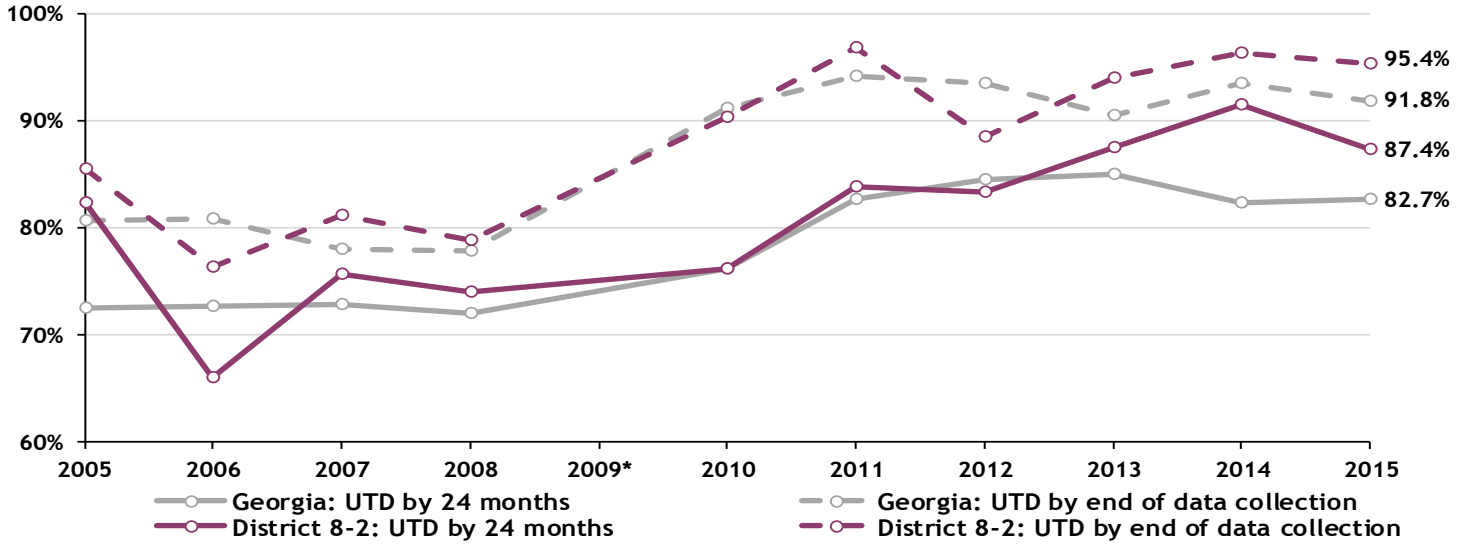
Table 8-2-B: Immunization Summary by Series & Vaccine Antigen, District 8-2, 2015

	District 8-2 (%)	State (%)
UTD immunization rate* **based on GRITS alone**	86.2 ±7.3	79.7 ± 1.8
UTD immunization rate* **by 24 months**	87.4 ±7.0	82.7 ± 1.7
UTD immunization rate* **by end of six-month data collection†**	95.4 ±4.4	91.8 ± 1.2
4 DTaP **by 24 months**	87.4 ±7.0	84.7 ± 1.6
3 DTaP **by 24 months**	100 ±0.0	95.6 ± 0.9
3 IPV **by 24 months**	100 ±0.0	94.9 ± 1.0
1 MMR **by 24 months**	94.3 ±4.9	91.2 ± 1.2
UTD Hib **by 24 months**	98.9 ±2.3	93.9 ± 1.1
3 Hep B **by 24 months**	100 ±0.0	95.9 ± 0.9
1 Varicella **by 24 months**	94.3 ±4.9	92.0 ± 1.2
UTD PCV **by 24 months**	93.1 ±5.4	91.1 ± 1.3
2 Rotavirus **by 24 months**	92.0 ±5.7	87.0 ± 1.5
2 Hep A **by 24 months**	70.1 ±9.7	58.8 ± 2.2
1+ Influenza **by 24 months**	73.6 ±9.3	62.1 ± 2.1

† Includes children who become UTD during the data collection period. This number is a testament to the efforts of District staff to reach the children originally listed as pending in their District.

* This rate includes children up-to-date by ACIP-recommended catch-up schedule.

Figure 8-2-A: Georgia Immunization Study and District 8-2 Immunization Rates, 2005-2015



* 2009 data was not collected due to a personnel vacancy.

District 8-2, Georgia Immunization Study Report, p3

Table 8-2-C: District 8-2 Sample Demographics & Immunization Rates, 2015

	Demographics for State and District 8-2 samples		Immunization Rates for District 8-2 Sample		
	Sample of Jan. 2013 births n=2,002 (%)	District 8-2 sample n=87 (%)	UTD based on GRITS alone (%)	UTD by 24 months (%)	UTD by end of data collection (%)
District 8-2 Rates			86.2	**87.4**	95.4
Maternal Race‡,†					
White (n=30)	49.2	34.5	76.7	**80.0**	90.0
Black or African-American (n=48)	34.9	55.2	89.6	**89.6**	97.9
Asian (n=1)	2.9	1.1	100.0	**100.0**	100.0
Multiracial (n=2)	3.6	2.3	100.0	**100.0**	100.0
Maternal Ethnicity‡,†					
Non-Hispanic (n=78)	87.3	89.7	84.6	**85.9**	94.9
Hispanic (n=9)	12.5	10.3	100.0	**100.0**	100.0
Maternal Age‡,†					
<25 years old (n=48)	39.2	55.2	79.2	**81.3**	95.8
25-34 years old (n=34)	47.8	39.1	94.1	**94.1**	94.1
35+ years old (n=5)	12.8	5.7	100.0	**100.0**	100.0
Maternal Education‡,†					
Some college or higher (n=33)	46.5	37.9	97.0	**97.0**	100.0
High school graduate/GED (n=32)	31.6	36.8	75.0	**78.1**	90.6
9th - 11th grade (n=18)	13.9	20.7	83.3	**83.3**	94.4
<9th grade (n=4)	4.0	4.6	100.0	**100.0**	100.0
Maternal Marital Status‡					
Married (n=22)	47.4	25.3	86.4	**90.9**	100.0
Unmarried (n=65)	51.0	74.7	86.2	**86.2**	93.8
WIC$^{\theta}$					
Non-WIC (n=18)	43.2	20.7	83.3	**88.9**	100.0
WIC (n=69)	56.8	79.3	87.0	**87.0**	94.2
Number of Providers†,$^{\theta}$					
One (n=15)	20.6	17.2	80.0	**80.0**	93.3
Two (n=42)	47.9	48.3	85.7	**88.1**	95.2
Three or more (n=27)	26.4	31.0	88.9	**88.9**	96.3
Provider Type†,$^{\theta}$					
Public sector (n=1)	1.6	1.1	100.0	**100.0**	100.0
Private sector only (n=36)	38.9	41.4	83.3	**86.1**	94.4
Both private and public sector (n=47)	54.4	54.0	87.2	**87.2**	95.7

Θ Please refer to Appendix B for detailed information about the collection of information for this variable.

† Indicates that the percentages for this variable may not add up to 100.0% because the information was missing in some cases.

‡ Indicates that this variable corresponds to the data collected at the time of delivery.

District 8-2, Georgia Immunization Study Report, p4

Demographic Findings
Because of the small sample size and inherent limitations of the data (Methods, page 11), no statistically significant differences in the UTD by 24 months immunization rates were found within the demographic groups in District 8-2 (Table 8-2-C).

Immunization Administration
Of the 1,773 vaccines doses given to the District 8-2 cohort, 11.2% were given by public providers and 88.8% were given by private providers (Figure 8-2-B).

Figure 8-2-B: Immunizations Administered: Private vs. Public Sector,District 8-2, 2015 (n= 1,773)

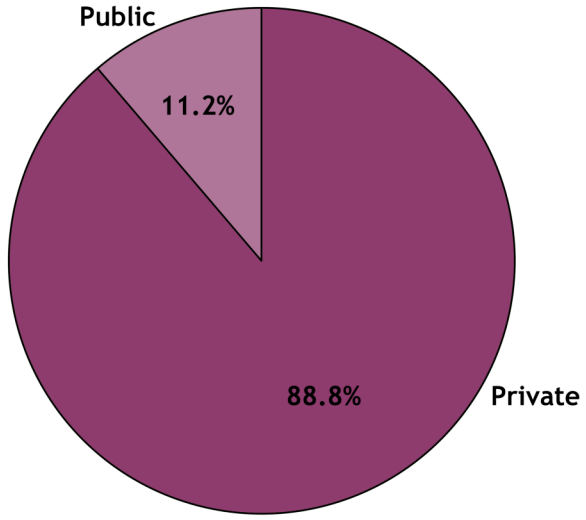


Table 8-2-D: Vaccine Antigen-Specific Immunization Coverage (%) by 24 months of age, District 8-2, 2010-2015

Vaccine Antigen	2011 - 2015	2011	2012	2013	2014	2015
4 DTaP by 24 months		86.0%	86.4%	86.0%	88.8%	87.4%
3 Polio by 24 months		95.7%	93.2%	97.1%	97.2%	100.0%
1 MMR by 24 months		94.6%	91.7%	91.2%	95.3%	94.3%
UTD Hib by 24 months		93.5%	95.5%	97.8%	98.1%	98.9%
3 Hepatitis B by 24 months		96.8%	96.2%	99.3%	98.1%	100.0%
1 Varicella by 24 months		94.6%	90.2%	93.4%	95.3%	94.3%
UTD PCV by 24 months		96.8%	88.6%	86.8%	98.1%	93.1%
2 Rotavirus by 24 months		90.3%	78.8%	91.2%	88.8%	92.0%
1 Influenza by 24 months		58.1%	56.8%	32.4%	67.3%	73.6%
2 Hepatitis A by 24 months		54.8%	64.4%	61.8%	66.4%	70.1%
Hepatitis B birth dose		91.4%	87.1%	89.7%	83.2%	78.2%

Immunization Rates by Vaccine Antigen
In District 8-2, the UTD immunization rates by 24 months for most vaccine antigens increased between 2014 and 2015 (Table 8-2-D).

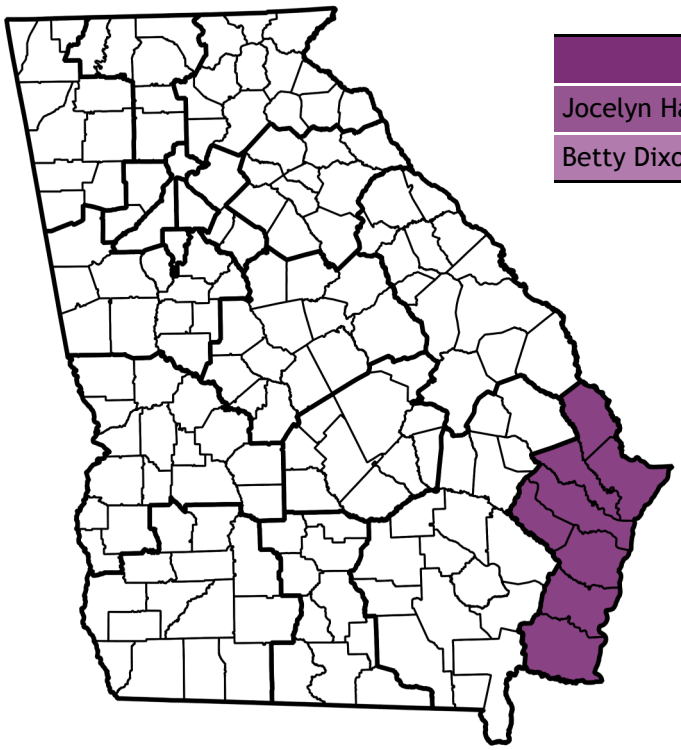
The biggest differences in UTD rates by antigen for the 4:3:1:3:3:1:4 series vaccines was observed in the PCV vaccine, which decreased by more than 5 percentage points from 2014 to 2015.

Other notable differences in UTD rates by antigen included Hepatitis A, which increased by more than 5 percentage points, and the Hepatitis B birth dose, which decreased by more than 5 percentage points from 2014 to 2015.

Vaccine Antigen-Specific Conclusions
Antigen-specific data suggest that the 4th DTaP dose vaccine could be the primary focus of District 8-2 and County-level immunization campaigns.

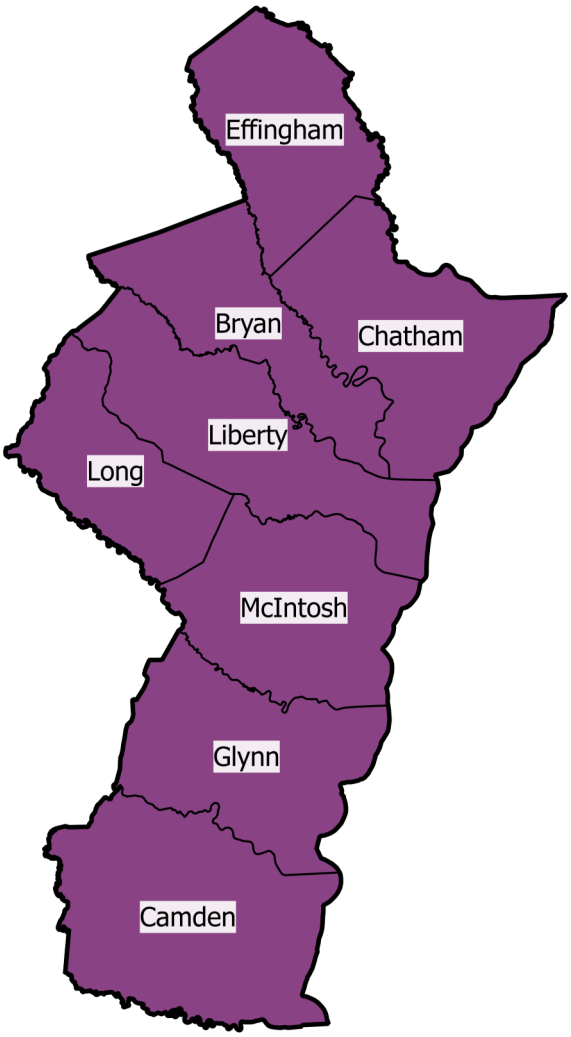
District 9-1

2015 Georgia Immunization Study Report



District 9-1 Data Collection Team	
Jocelyn Hall, RN, BSN	District Immunization Coordinator
Betty Dixon, DRPH	Primary Data Collector

County	Number in Final Sample
Bryan	8
Camden	11
Chatham	57
Effingham	9
Glynn	14
Liberty	9
Long	3
McIntosh	1
District 9-1	**112**
District UTD by 24 months Immunization Rate	**90.2%**
State of Georgia	**2,002**
State UTD by 24 months Immunization Rate	**82.7%**



District 9-1

Georgia Immunization Study Report, p2

The 2015 GIS sampled a total of 112 children in District 9-1 (Table 9-1-A).

For the District 9-1 sample, the up-to-date (UTD) immunization rate by 24 months of age (90.2%) was 7.1 percentage points than in 2014 (83.1%). The UTD immunization rate based on GRITS alone (88.4%) increased 6.6 percentage points from 2014 (81.8%). The UTD immunization rate by the end of data collection (95.5%) was 3.3 percentage points higher than in 2014 (92.2%). Immunization rates that decreased are shown in red (Table 9-1-B).

A comparison of GIS immunization rates between District 9-1 and Georgia for the 4:3:1:3:3:1:4 series, from 2005 to 2015, is shown in Figure 9-1-A.

Table 9-1-A: GIS Sampling Scheme, District 9-1, 2015

	District 9-1 (n)	State (n)
Original Sample	127	2,225
Ineligible	8	159
(Refused to Participate)	.	15
Eligible Sample	119	2,066
Unable to Locate†	7	64
Final Sample	112	2,002
Response Rate (%)	94.1	96.9

† Children were classified as "Unable to Locate" if every conceivable effort was made to locate and communicate with the child's guardian and the child's provider was either unknown or also unable to locate the guardian.

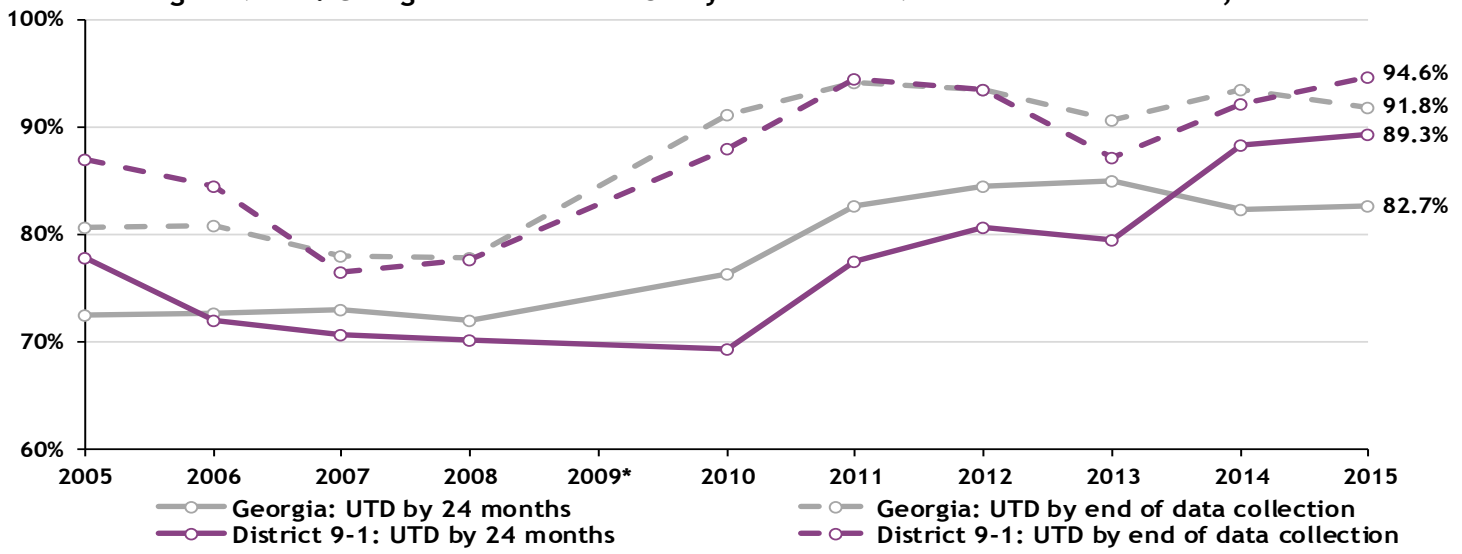
Table 9-1-B: Immunization Summary by Series & Vaccine Antigen, District 9-1, 2015

	District 9-1 (%)	State (%)
UTD immunization rate* **based on GRITS alone**	88.4 ± 6.0	79.7 ± 1.8
UTD immunization rate* **by 24 months**	90.2 ± 5.5	82.7 ± 1.7
UTD immunization rate* **by end of six-month data collection†**	95.5 ± 3.8	91.8 ± 1.2
4 DTaP **by 24 months**	90.2 ± 5.5	84.7 ± 1.6
3 DTaP **by 24 months**	96.4 ± 3.5	95.6 ± 0.9
3 IPV **by 24 months**	96.4 ± 3.5	94.9 ± 1.0
1 MMR **by 24 months**	93.8 ± 4.5	91.2 ± 1.2
UTD Hib **by 24 months**	95.5 ± 3.8	93.9 ± 1.1
3 Hep B **by 24 months**	98.2 ± 2.5	95.9 ± 0.9
1 Varicella **by 24 months**	93.8 ± 4.5	92.0 ± 1.2
UTD PCV **by 24 months**	93.8 ± 4.5	91.1 ± 1.3
2 Rotavirus **by 24 months**	85.7 ± 6.5	87.0 ± 1.5
2 Hep A **by 24 months**	67.9 ± 8.7	58.8 ± 2.2
1+ Influenza **by 24 months**	70.5 ± 8.5	62.1 ± 2.1

† Includes children who become UTD during the data collection period. This number is a testament to the efforts of District staff to reach the children originally listed as pending in their District.

* This rate includes children up-to-date by ACIP-recommended catch-up schedule.

Figure 9-1-A: Georgia Immunization Study and District 9-1 Immunization Rates, 2005-2015



* 2009 data was not collected due to a personnel vacancy.

District 9-1, Georgia Immunization Study Report, p3

Table 9-1-C: District 9-1 Sample Demographics & Immunization Rates, 2015					
	Demographics for State and District 9-1 samples		Immunization Rates for District 9-1 Sample		
	Sample of Jan. 2013 births n=2,002 (%)	District 9-1 sample n=112 (%)	UTD based on GRITS alone (%)	UTD by 24 months (%)	UTD by end of data collection (%)
District 9-1 Rates			88.4	**90.2**	95.5
Maternal Race‡,†					
White (n=64)	49.2	57.1	90.6	**90.6**	96.9
Black or African-American (n=41)	34.9	36.6	90.2	**92.7**	95.1
Asian (n=2)	2.9	1.8	50.0	**50.0**	50.0
Multiracial (n=4)	3.6	3.6	75.0	**75.0**	100.0
Maternal Ethnicity‡,†					
Non-Hispanic (n=108)	87.3	96.4	88.0	**89.8**	95.4
Hispanic (n=4)	12.5	3.6	100.0	**100.0**	100.0
Maternal Age‡,†					
<25 years old (n=37)	39.2	33.0	89.2	**91.9**	97.3
25-34 years old (n=54)	47.8	48.2	88.9	**90.7**	96.3
35+ years old (n=21)	12.8	18.8	85.7	**85.7**	90.5
Maternal Education‡,†					
Some college or higher (n=61)	46.5	54.5	90.2	**90.2**	93.4
High school graduate/GED (n=35)	31.6	31.3	85.7	**88.6**	100.0
9th - 11th grade (n=14)	13.9	12.5	92.9	**92.9**	92.9
<9th grade (n=1)	4.0	0.9	100.0	**100.0**	100.0
Maternal Marital Status‡					
Married (n=58)	47.4	51.8	86.2	**86.2**	93.1
Unmarried (n=54)	51.0	48.2	90.7	**94.4**	98.1
WIC$^{\theta}$					
Non-WIC (n=60)	43.2	53.6	86.7	**88.3**	95.0
WIC (n=52)	56.8	46.4	90.4	**92.3**	96.2
Number of Providers†,$^{\theta}$					
One (n=13)	20.6	11.6	76.9	**76.9**	76.9
Two (n=50)	47.9	44.6	86.0	**88.0**	98.0
Three or more (n=42)	26.4	37.5	92.9	**95.2**	97.6
Provider Type†,$^{\theta}$					
Public sector (n=4)	1.6	3.6	25.0	**25.0**	75.0
Private sector only (n=24)	38.9	21.4	83.3	**87.5**	91.7
Both private and public sector (n=77)	54.4	68.8	92.2	**93.5**	97.4

Θ Please refer to Appendix B for detailed information about the collection of information for this variable.

† Indicates that the percentages for this variable may not add up to 100.0% because the information was missing in some cases.

‡ Indicates that this variable corresponds to the data collected at the time of delivery.

District 9-1, Georgia Immunization Study Report, p4

Demographic Findings
In spite of the small sample size and inherent limitations of the data (Methods, page 11), the District 9-1 results suggest that the following groups were the least often up-to-date on their immunizations by 24 months of age:

- Children receiving immunizations from only public providers

Immunization Administration
Of the 2,157 vaccines doses given to the District 9-1 cohort, 11.1% were given by public providers and 88.9% were given by private providers (Figure 9-1-B).

Figure 9-1-B: Immunizations Administered: Private vs. Public Sector, District 9-1, 2015 (n= 2,157)

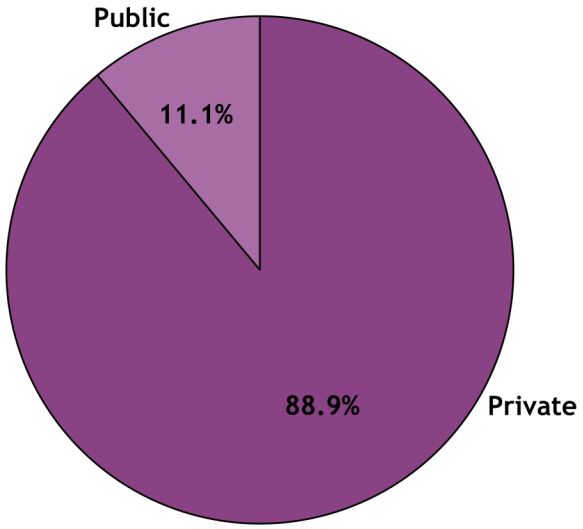


Table 9-1-D: Vaccine Antigen-Specific Immunization Coverage (%) by 24 months of age, District 9-1, 2010-2015

Vaccine Antigen	2011 - 2015	2011	2012	2013	2014	2015
4 DTaP by 24 months		83.8%	85.1%	81.9%	84.4%	90.2%
3 Polio by 24 months		98.6%	98.3%	93.6%	94.8%	96.4%
1 MMR by 24 months		90.8%	91.7%	90.1%	93.5%	93.8%
UTD Hib by 24 months		94.4%	96.7%	93.0%	96.1%	95.5%
3 Hepatitis B by 24 months		94.4%	98.9%	92.4%	94.8%	98.2%
1 Varicella by 24 months		93.7%	94.5%	90.6%	94.2%	93.8%
UTD PCV by 24 months		94.4%	90.1%	77.2%	93.5%	93.8%
2 Rotavirus by 24 months		71.8%	61.9%	71.3%	79.9%	85.7%
1 Influenza by 24 months		61.3%	59.7%	31.0%	66.9%	70.5%
2 Hepatitis A by 24 months		58.5%	60.2%	62.0%	62.3%	67.9%
Hepatitis B birth dose		82.4%	86.2%	83.6%	85.1%	79.5%

Immunization Rates by Vaccine Antigen
In District 9-1, the UTD immunization rates by 24 months for most vaccine antigens increased between 2014 and 2015 (Table 9-1-D).

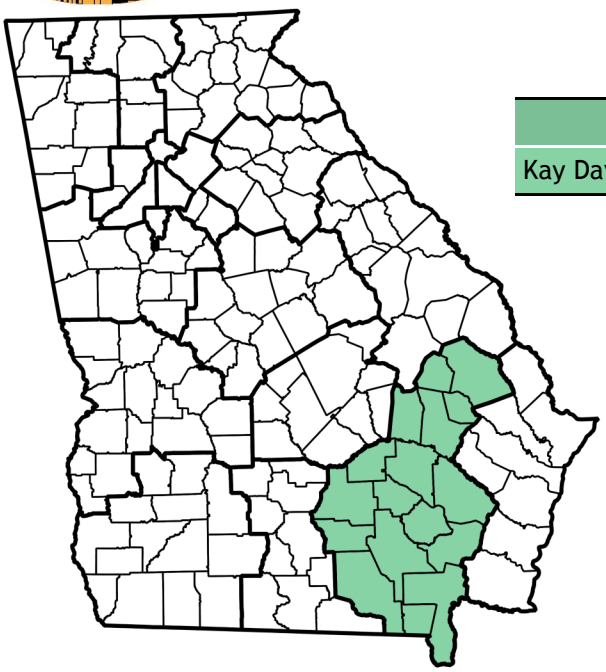
The biggest difference in UTD rates by antigen for the 4:3:1:3:3:1:4 series vaccines was observed in the 4th DTaP dose, which increased by more than 5 percentage points from 2014 to 2015.

Other notable differences in UTD rates by antigen included Rotavirus and Hepatitis A, which increased by more than 5 percentage points, and the Hepatitis B birth dose, which decreased by more than 5 percentage points from 2014 to 2015.

Vaccine Antigen-Specific Conclusions
Antigen-specific data suggest that the fourth DTaP dose and MMR vaccines could be the primary focus of District 9-1 and County-level immunization campaigns.

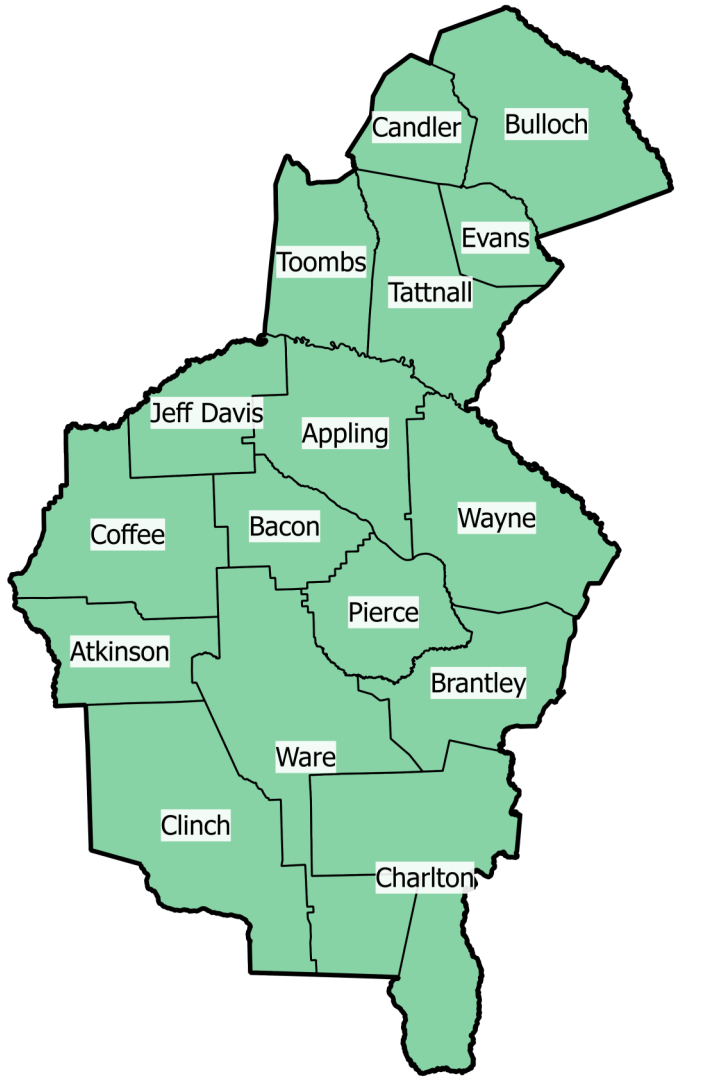
District 9-2

2015 Georgia Immunization Study Report



District 9-2 Data Collection Team	
Kay Davis, RN, MSN	District Immunization Coordinator

County	Number in Final Sample
Appling	6
Atkinson	4
Bacon	3
Brantley	3
Bulloch	18
Candler	3
Charlton	2
Clinch	1
Coffee	9
Evans	4
Jeff Davis	6
Pierce	3
Tattnall	4
Toombs	9
Ware	11
Wayne	8
District 9-2	**94**
District UTD by 24 months Immunization Rate	**85.1%**
State of Georgia	**2,002**
State UTD by 24 months Immunization Rate	**82.7%**



District 9-2

Georgia Immunization Study Report, p2

The 2015 GIS sampled a total of 94 children in District 9-2 (Table 9-2-A).

For the District 9-2 sample, the up-to-date (UTD) immunization rate by 24 months of age (85.1%) was 2.7 percentage points lower than in 2014 (87.8%). The UTD immunization rate based on GRITS alone (85.1%) decreased 2.7 percentage points from 2014 (87.8%). The UTD immunization rate by the end of data collection (97.9%) was 0.5 percentage points than in 2014 (97.4%). Immunization rates that decreased are shown in red (Table 9-2-B).

A comparison of GIS immunization rates between District 9-2 and Georgia for the 4:3:1:3:3:1:4 series, from 2005 to 2015, is shown in Figure 9-2-A.

Table 9-2-A: GIS Sampling Scheme, District 9-2, 2015

	District 9-2 (n)	State (n)
Original Sample	101	2,225
Ineligible	6	159
(Refused to Participate)	.	15
Eligible Sample	95	2,066
Unable to Locate†	1	64
Final Sample	94	2,002
Response Rate (%)	99.0	96.9

† Children were classified as "Unable to Locate" if every conceivable effort was made to locate and communicate with the child's guardian and the child's provider was either unknown or also unable to locate the guardian.

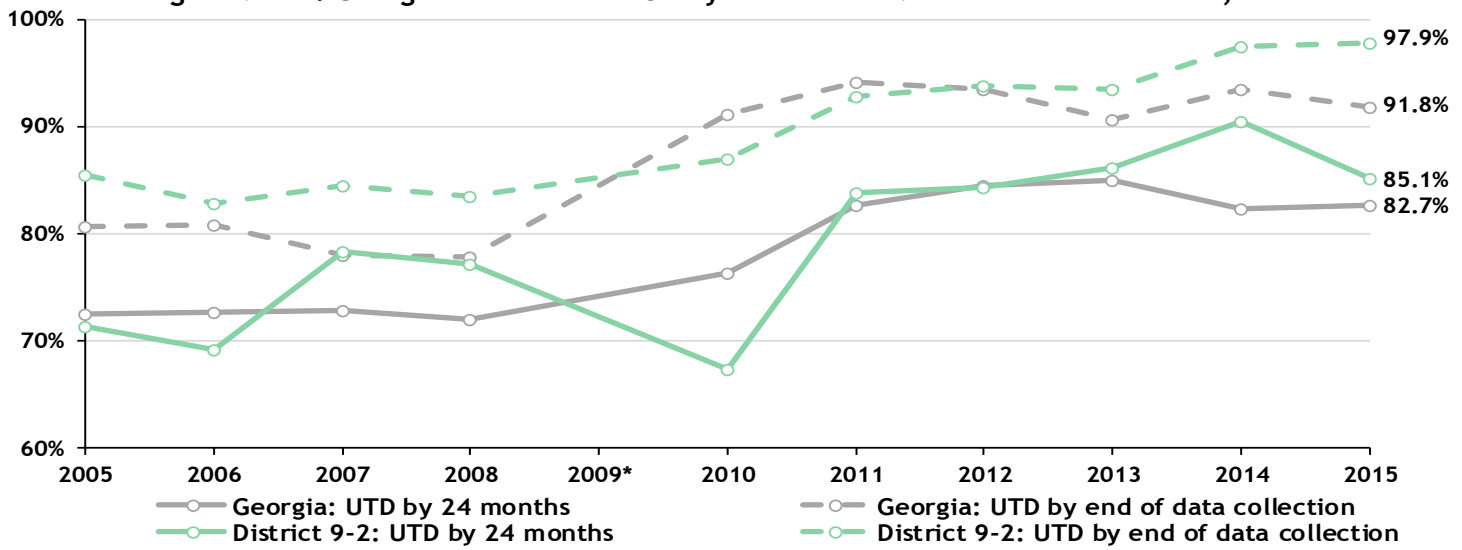
Table 9-2-B: Immunization Summary by Series & Vaccine Antigen, District 9-2, 2015

	District 9-2 (%)	State (%)
UTD immunization rate* **based on GRITS alone**	85.1 ± 7.2	79.7 ± 1.8
UTD immunization rate* **by 24 months**	85.1 ± 7.2	82.7 ± 1.7
UTD immunization rate* **by end of six-month data collection†**	97.9 ± 2.9	91.8 ± 1.2
4 DTaP **by 24 months**	86.2 ± 7.0	84.7 ± 1.6
3 DTaP **by 24 months**	97.9 ± 2.9	95.6 ± 0.9
3 IPV **by 24 months**	97.9 ± 2.9	94.9 ± 1.0
1 MMR **by 24 months**	92.6 ± 5.3	91.2 ± 1.2
UTD Hib **by 24 months**	94.7 ± 4.6	93.9 ± 1.1
3 Hep B **by 24 months**	97.9 ± 2.9	95.9 ± 0.9
1 Varicella **by 24 months**	94.7 ± 4.6	92.0 ± 1.2
UTD PCV **by 24 months**	91.5 ± 5.7	91.1 ± 1.3
2 Rotavirus **by 24 months**	86.2 ± 7.0	87.0 ± 1.5
2 Hep A **by 24 months**	63.8 ± 9.8	58.8 ± 2.2
1+ Influenza **by 24 months**	60.6 ± 9.9	62.1 ± 2.1

† Includes children who become UTD during the data collection period. This number is a testament to the efforts of District staff to reach the children originally listed as pending in their District.

* This rate includes children up-to-date by ACIP-recommended catch-up schedule.

Figure 9-2-A: Georgia Immunization Study and District 9-2 Immunization Rates, 2005-2015



* 2009 data was not collected due to a personnel vacancy.

District 9-2, Georgia Immunization Study Report, p3

Table 9-2-C: District 9-2 Sample Demographics & Immunization Rates, 2015

	Demographics for State and District 9-2 samples		Immunization Rates for District 9-2 Sample		
	Sample of Jan. 2013 births n=2,002 (%)	District 9-2 sample n=94 (%)	UTD based on GRITS alone (%)	UTD by 24 months (%)	UTD by end of data collection (%)
District 9-2 Rates			85.1	**85.1**	97.9
Maternal Race‡,†					
White (n=55)	49.2	58.5	89.1	**89.1**	98.2
Black or African-American (n=36)	34.9	38.3	77.8	**77.8**	97.2
Asian (n=0)	2.9	.	.	.	.
Multiracial (n=1)	3.6	1.1	100.0	**100.0**	100.0
Maternal Ethnicity‡,†					
Non-Hispanic (n=86)	87.3	91.5	83.7	**83.7**	97.7
Hispanic (n=8)	12.5	8.5	100.0	**100.0**	100.0
Maternal Age‡,†					
<25 years old (n=44)	39.2	46.8	81.8	**81.8**	100.0
25-34 years old (n=42)	47.8	44.7	88.1	**88.1**	97.6
35+ years old (n=8)	12.8	8.5	87.5	**87.5**	87.5
Maternal Education‡,†					
Some college or higher (n=36)	46.5	38.3	83.3	**83.3**	100.0
High school graduate/GED (n=33)	31.6	35.1	93.9	**93.9**	97.0
9th - 11th grade (n=20)	13.9	21.3	75.0	**75.0**	95.0
<9th grade (n=4)	4.0	4.3	75.0	**75.0**	100.0
Maternal Marital Status‡					
Married (n=38)	47.4	40.4	92.1	**92.1**	97.4
Unmarried (n=55)	51.0	58.5	80.0	**80.0**	98.2
WIC$^{\theta}$					
Non-WIC (n=21)	43.2	22.3	95.2	**95.2**	100.0
WIC (n=73)	56.8	77.7	82.2	**82.2**	97.3
Number of Providers†,$^{\theta}$					
One (n=8)	20.6	8.5	75.0	**75.0**	87.5
Two (n=35)	47.9	37.2	88.6	**88.6**	100.0
Three or more (n=46)	26.4	48.9	84.8	**84.8**	100.0
Provider Type†,$^{\theta}$					
Public sector only (n=4)	1.6	4.3	100.0	**100.0**	100.0
Private sector only (n=16)	38.9	17.0	81.3	**81.3**	93.8
Both private and public sector (n=69)	54.4	73.4	85.5	**85.5**	100.0

Θ Please refer to Appendix B for detailed information about the collection of information for this variable.

† Indicates that the percentages for this variable may not add up to 100.0% because the information was missing in some cases.

‡ Indicates that this variable corresponds to the data collected at the time of delivery.

Demographic Findings
Because of the small sample size and inherent limitations of the data (Methods, page 11), no statistically significant differences in the UTD by 24 months immunization rates were found within the demographic groups in District 9-2 (Table 9-2-C).

Immunization Administration
Of the 1,807 vaccines doses given to the District 9-2 cohort, 19.9% were given by public providers and 80.1% were given by private providers (Figure 9-2-B).

Figure 9-2-B: Immunizations Administered: Private vs. Public Sector, District 9-2, 2015 (n= 1,807)

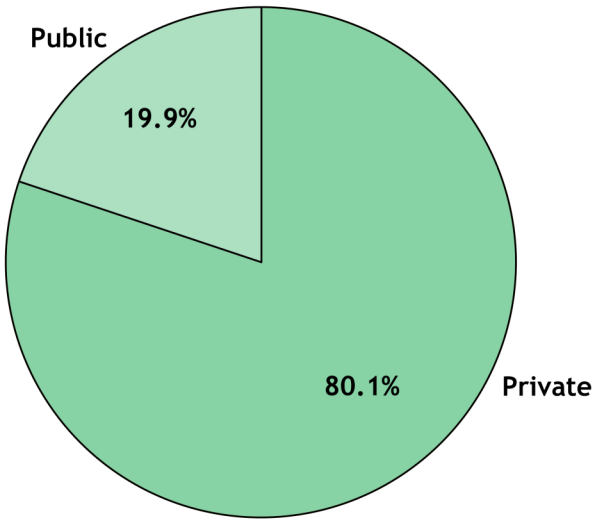


Table 9-2-D: Vaccine Antigen-Specific Immunization Coverage (%) by 24 months of age, District 9-2, 2010-2015

Vaccine Antigen	2011 - 2015	2011	2012	2013	2014	2015
4 DTaP by 24 months		85.6%	83.6%	87.0%	89.6%	86.2%
3 Polio by 24 months		95.5%	95.3%	98.4%	98.3%	97.9%
1 MMR by 24 months		94.6%	94.5%	95.1%	93.9%	92.6%
UTD Hib by 24 months		92.8%	96.1%	95.9%	96.5%	94.7%
3 Hepatitis B by 24 months		95.5%	96.9%	100.0%	99.1%	97.9%
1 Varicella by 24 months		95.5%	93.8%	96.7%	95.7%	94.7%
UTD PCV by 24 months		96.4%	89.1%	87.0%	92.2%	91.5%
2 Rotavirus by 24 months		81.1%	64.1%	88.6%	94.8%	86.2%
1 Influenza by 24 months		49.5%	50.8%	18.7%	59.1%	60.6%
2 Hepatitis A by 24 months		56.8%	60.9%	67.5%	68.7%	63.8%
Hepatitis B birth dose		92.8%	86.7%	95.1%	93.0%	87.2%

Immunization Rates by Vaccine Antigen
In District 9-2, the UTD immunization rates by 24 months for almost all vaccine antigens decreased (labeled in red) between 2014 and 2015.

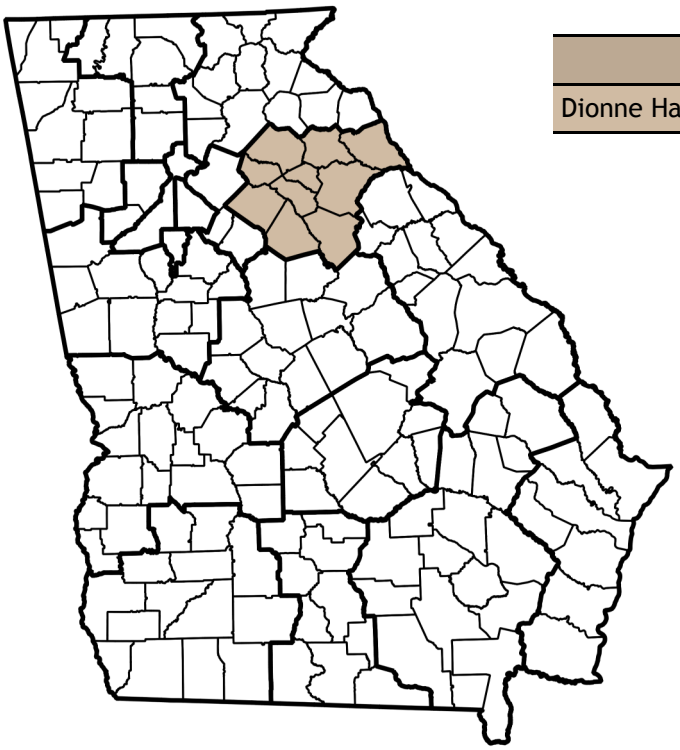
The UTD immunization rate by antigen for all of the 4:3:1:3:3:1:4 series vaccines decreased slightly (less than 5 percentage point difference) from 2014 to 2015.

Other notable differences in UTD rates by antigen included Rotavirus, Hepatitis A, and the Hepatitis B birth dose, which each decreased by more than 5 percentage points from 2014 to 2015.

Vaccine Antigen-Specific Conclusions
Antigen-specific data suggest that the fourth DTaP dose vaccine could be the primary focus of District 9-2 and County-level immunization campaigns.

District 10

2015 Georgia Immunization Study Report



District 10 Data Collection Team	
Dionne Hansey	District Immunization Coordinator

County	Number in Final Sample
Barrow	21
Clarke	20
Elbert	5
Greene	2
Jackson	11
Madison	9
Morgan	1
Oconee	3
Oglethrope	2
Walton	21
District 10	**95**
District UTD by 24 months Immunization Rate	**86.3%**
State of Georgia	**2,002**
State UTD by 24 months Immunization Rate	**82.7%**

District 10

Georgia Immunization Study Report, p2

The 2015 GIS sampled a total of 95 children in District 10 (Table 10-A).

For the District 10 sample, the up-to-date (UTD) immunization rate by 24 months of age (86.3%) was 1.8 percentage points higher than in 2014 (84.5%). The UTD immunization rate based on GRITS alone (81.1%) decreased 1.0 percentage points from 2014 (82.1%). The UTD immunization rate by the end of data collection (92.6%) was 2.6 percentage points lower than in 2014 (95.2%). Immunization rates that decreased are shown in red (Table 10-B).

A comparison of GIS immunization rates between District 10 and Georgia for the 4:3:1:3:3:1:4 series, from 2005 to 2015, is shown in Figure 10-A.

Table 10-A: GIS Sampling Scheme, District 10, 2015

	District 10 (n)	State (n)
Original Sample	110	2,225
Ineligible	12	159
(Refused to Participate)	3	15
Eligible Sample	98	2,066
Unable to Locate†	3	64
Final Sample	95	2,002
Response Rate (%)	96.9	96.9

† Children were classified as "Unable to Locate" if every conceivable effort was made to locate and communicate with the child's guardian and the child's provider was either unknown or also unable to locate the guardian.

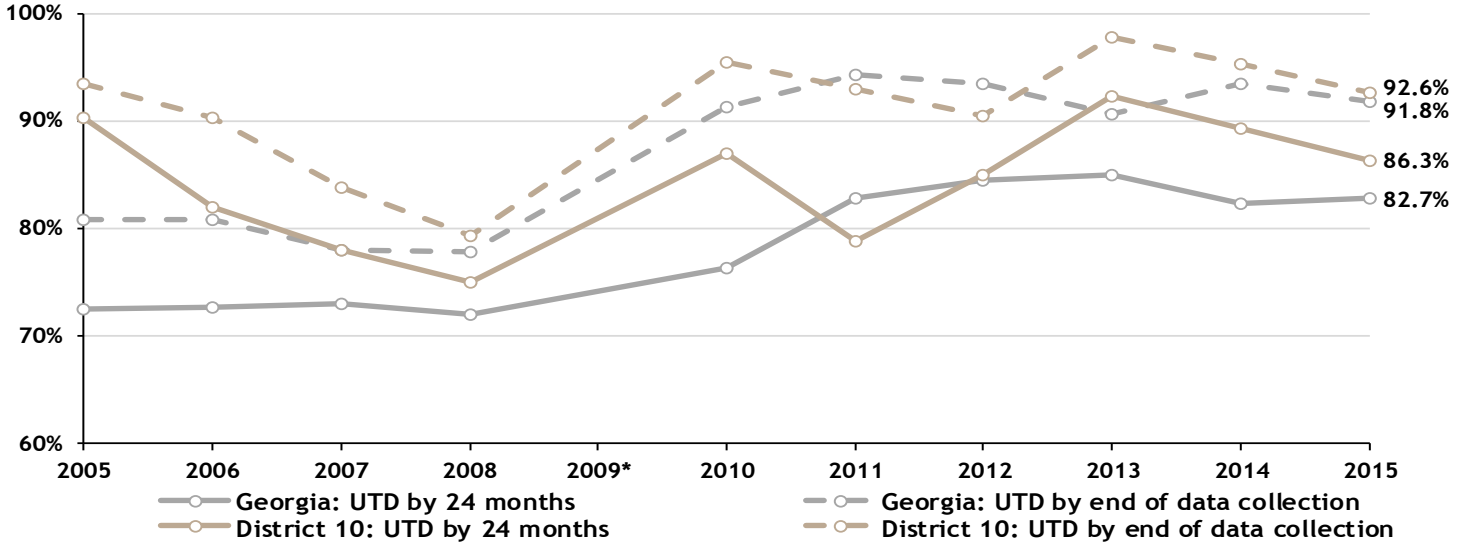
Table 10-B: Immunization Summary by Series & Vaccine Antigen, District 10, 2015

	District 10 (%)	State (%)
UTD immunization rate* **based on GRITS alone**	81.1 ± 7.9	79.7 ± 1.8
UTD immunization rate* **by 24 months**	86.3 ± 6.9	82.7 ± 1.7
UTD immunization rate* **by end of six-month data collection†**	92.6 ± 5.3	91.8 ± 1.2
4 DTaP **by 24 months**	90.5 ± 5.9	84.7 ± 1.6
3 DTaP **by 24 months**	97.9 ± 2.9	95.6 ± 0.9
3 IPV **by 24 months**	96.8 ± 3.5	94.9 ± 1.0
1 MMR **by 24 months**	94.7 ± 4.5	91.2 ± 1.2
UTD Hib **by 24 months**	96.8 ± 3.5	93.9 ± 1.1
3 Hep B **by 24 months**	96.8 ± 3.5	95.9 ± 0.9
1 Varicella **by 24 months**	92.6 ± 5.3	92.0 ± 1.2
UTD PCV **by 24 months**	93.7 ± 4.9	91.1 ± 1.3
2 Rotavirus **by 24 months**	89.5 ± 6.2	87.0 ± 1.5
2 Hep A **by 24 months**	60.0 ± 9.9	58.8 ± 2.2
1+ Influenza **by 24 months**	61.1 ± 9.9	62.1 ± 2.1

† Includes children who become UTD during the data collection period. This number is a testament to the efforts of District staff to reach the children originally listed as pending in their District.

* This rate includes children up-to-date by ACIP-recommended catch-up schedule.

Figure 10-A: Georgia Immunization Study and District 10 Immunization Rates, 2005-2015



* 2009 data was not collected due to a personnel vacancy.

District 10, Georgia Immunization Study Report, p3

Table 10-C: District 10 Sample Demographics & Immunization Rates, 2015

	Demographics for State and District 10 samples		Immunization Rates for District 10 Sample		
	Sample of Jan. 2013 births n=2,002 (%)	District 10 sample n=93 (%)	UTD based on GRITS alone (%)	UTD by 24 months (%)	UTD by end of data collection (%)
District 10 Rates			81.1	**86.3**	92.6
Maternal Race‡,†					
White (n=59)	49.2	62.1	81.4	**86.4**	93.2
Black or African-American (n=15)	34.9	15.8	86.7	**86.7**	86.7
Asian (n=5)	2.9	5.3	80.0	**80.0**	80.0
Multiracial (n=8)	3.6	8.4	75.0	**87.5**	100.0
Maternal Ethnicity‡,†					
Non-Hispanic (n=82)	87.3	86.3	79.3	**85.4**	91.5
Hispanic (n=12)	12.5	12.6	91.7	**91.7**	100.0
Maternal Age‡,†					
<25 years old (n=46)	39.2	48.4	82.6	**84.8**	91.3
25-34 years old (n=35)	47.8	36.8	80.0	**85.7**	94.3
35+ years old (n=13)	12.8	13.7	76.9	**92.3**	92.3
Maternal Education‡,†					
Some college or higher (n=44)	46.5	46.3	86.4	**93.2**	95.5
High school graduate/GED (n=31)	31.6	32.6	77.4	**77.4**	90.3
9th - 11th grade (n=10)	13.9	10.5	80.0	**80.0**	80.0
<9th grade (n=5)	4.0	5.3	80.0	**80.0**	100.0
Maternal Marital Status‡					
Married (n=43)	47.4	45.3	86.0	**95.3**	100.0
Unmarried (n=50)	51.0	52.6	76.0	**78.0**	86.0
WIC$^{\theta}$					
Non-WIC (n=45)	43.2	47.4	82.2	**93.3**	93.3
WIC (n=50)	56.8	52.6	80.0	**80.0**	92.0
Number of Providers†,$^{\theta}$					
One (n=17)	20.6	17.9	76.5	**88.2**	94.1
Two (n=46)	47.9	48.4	80.4	**87.0**	93.5
Three or more (n=28)	26.4	29.5	89.3	**89.3**	96.4
Provider Type†,$^{\theta}$					
Public sector (n=3)	1.6	3.2	100.0	**100.0**	100.0
Private sector only (n=36)	38.9	37.9	72.2	**83.3**	94.4
Both private and public sector (n=52)	54.4	54.7	88.5	**90.4**	94.2

Θ Please refer to Appendix B for detailed information about the collection of information for this variable.

† Indicates that the percentages for this variable may not add up to 100.0% because the information was missing in some cases.

‡ Indicates that this variable corresponds to the data collected at the time of delivery.

Demographic Findings:
In spite of the small sample size and inherent limitations of the data (Methods, page 11), the District 10 results suggest that the following groups were the least often up-to-date on their immunizations by 24 months of age:

- Children of unmarried mothers

Immunization Administration:
Of the 1,902 vaccines doses given to the District 10 cohort, 7.8% were given by public providers and 92.2% were given by private providers (Figure 10-B).

Figure 10-B: Immunizations Administered: Private vs. Public Sector, District 10, 2015 (n= 1,902)

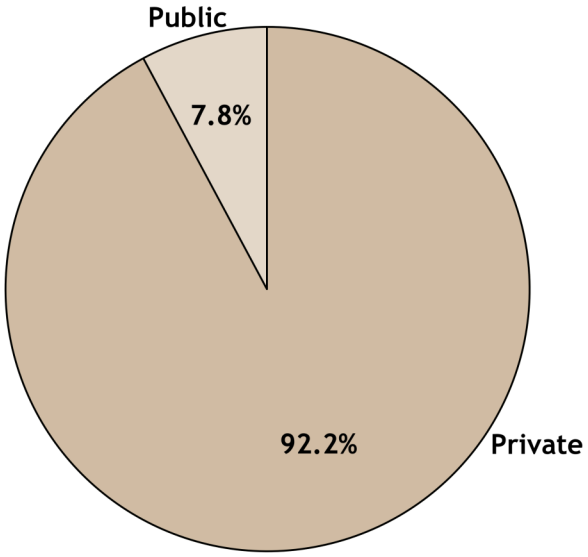


Table 10-D: Vaccine Antigen-Specific Immunization Coverage (%) by 24 months of age, District 10, 2010-2015

Vaccine Antigen	2011 - 2015	2011	2012	2013	2014	2015
4 DTaP by 24 months		84.8%	89.2%	88.3%	85.7%	90.5%
3 Polio by 24 months		96.0%	95.8%	100.0%	98.8%	96.8%
1 MMR by 24 months		89.9%	94.6%	94.5%	95.2%	94.7%
UTD Hib by 24 months		94.9%	98.2%	100.0%	98.8%	96.8%
3 Hepatitis B by 24 months		94.9%	95.2%	99.2%	96.4%	96.8%
1 Varicella by 24 months		93.9%	95.8%	95.3%	96.4%	92.6%
UTD PCV by 24 months		94.9%	97.0%	87.5%	97.6%	93.7%
2 Rotavirus by 24 months		82.8%	79.0%	86.7%	88.1%	89.5%
1 Influenza by 24 months		53.5%	50.3%	25.8%	65.5%	61.1%
2 Hepatitis A by 24 months		49.5%	55.1%	62.5%	54.8%	60.0%
Hepatitis B birth dose		61.6%	68.3%	75.0%	82.1%	84.2%

Immunization Rates by Vaccine Antigen
In District 10, the UTD immunization rates by 24 months for most vaccine antigens decreased (labeled in red) between 2014 and 2015 (Table 10-D).

The UTD immunization rates by antigen for most of the 4:3:1:3:3:1:4 series vaccines decreased slightly (less than 5 percentage point difference), except for the 4th DTaP dose and Hepatitis B, which increased slightly from 2014 to 2015.

Notable differences in UTD rates by antigen included Hepatitis A, which increased by more than 5 percentage points from 2014 to 2015.

Vaccine Antigen-Specific Conclusions
Antigen-specific data suggest that the Hepatitis B birth vaccine could be the primary focus of District 10 and County-level immunization campaigns.

Appendices

Georgia Immunization Study, 2015

Appendix A: Margins of Error, p1

Appendix Table A-1: Margins of Error for UTD Immunization Rates by 24 months, Georgia, 2015							
District	Final Sample (n)	Immunization Rate	1-Immunization Rate	Margin of Error*	95% Confidence Intervals		
1-1 Northwest (Rome)	143	81.1%	18.9%	6.4%	74.7%	-	87.5%
1-2 North Georgia (Dalton)	118	75.4%	24.6%	7.8%	67.6%	-	83.2%
2-0 North (Gainesville)	122	78.7%	21.3%	7.3%	71.4%	-	86.0%
3-1 Cobb-Douglas	93	81.7%	18.3%	7.9%	73.9%	-	89.6%
3-2 Fulton	108	84.3%	15.7%	6.9%	77.4%	-	91.1%
3-3 Clayton	125	87.2%	12.8%	5.9%	81.3%	-	93.1%
3-4 Gwinnett, Newton, Rockdale	155	83.2%	16.8%	5.9%	77.3%	-	89.1%
3-5 DeKalb	130	73.8%	26.2%	7.6%	66.3%	-	81.4%
4-0 LaGrange	142	78.2%	21.8%	6.8%	71.4%	-	85.0%
5-1 South Central (Dublin)	72	70.8%	29.2%	10.5%	60.3%	-	81.3%
5-2 North Central (Macon)	83	86.7%	13.3%	7.3%	79.4%	-	94.0%
6-0 East Central (Augusta)	88	85.2%	14.8%	7.4%	77.8%	-	92.6%
7-0 West Central (Columbus)	129	85.3%	14.7%	6.1%	79.2%	-	91.4%
8-1 South (Valdosta)	106	89.6%	10.4%	5.8%	83.8%	-	95.4%
8-2 Southwest (Albany)	87	87.4%	12.6%	7.0%	80.4%	-	94.3%
9-1 Coastal (Savannah)	112	90.2%	9.8%	5.5%	84.7%	-	95.7%
9-2 Southeast (Waycross)	94	85.1%	14.9%	7.2%	77.9%	-	92.3%
10 Northeast (Athens)	95	86.3%	13.7%	6.9%	79.4%	-	93.2%
Georgia	**2,002**	**82.7%**	**17.3%**	**1.7%**	**81.0%**	**-**	**84.4%**

**The margin of error (MOE) is a statistic conveying the amount of random sampling error in a survey's results. It expresses the maximum expected difference between the true population parameter and a sample estimate of that parameter. The larger the MOE around an estimated value, the less accurate the estimated value is.*

Appendix A: Margins of Error, p2

Appendix Table A-2: Margins of Error for UTD Immunization Rates by End of Six-Month Data Collection, Georgia, 2015							
District	Final Sample (n)	Immunization Rate	1-Immunization Rate	Margin of Error*	95% Confidence Intervals		
1-1 Northwest (Rome)	143	91.6%	8.4%	4.5%	87.1%	-	96.2%
1-2 North Georgia (Dalton)	118	89.8%	10.2%	5.5%	84.4%	-	95.3%
2-0 North (Gainesville)	122	89.3%	10.7%	5.5%	83.9%	-	94.8%
3-1 Cobb-Douglas	93	90.3%	9.7%	6.0%	84.3%	-	96.3%
3-2 Fulton	108	90.7%	9.3%	5.5%	85.3%	-	96.2%
3-3 Clayton	125	96.8%	3.2%	3.1%	93.7%	-	99.9%
3-4 Gwinnett, Newton, Rockdale	155	90.3%	9.7%	4.7%	85.7%	-	95.0%
3-5 DeKalb	130	80.0%	20.0%	6.9%	73.1%	-	86.9%
4-0 LaGrange	142	85.9%	14.1%	5.7%	80.2%	-	91.6%
5-1 South Central (Dublin)	72	91.7%	8.3%	6.4%	85.3%	-	98.1%
5-2 North Central (Macon)	83	94.0%	6.0%	5.1%	88.9%	-	99.1%
6-0 East Central (Augusta)	88	95.5%	4.5%	4.4%	91.1%	-	99.8%
7-0 West Central (Columbus)	129	95.3%	4.7%	3.6%	91.7%	-	99.0%
8-1 South (Valdosta)	106	96.2%	3.8%	3.6%	92.6%	-	99.9%
8-2 Southwest (Albany)	87	95.4%	4.6%	4.4%	91.0%	-	99.8%
9-1 Coastal (Savannah)	112	95.5%	4.5%	3.8%	91.7%	-	99.4%
9-2 Southeast (Waycross)	94	97.9%	2.1%	2.9%	95.0%	-	100.0%
10 Northeast (Athens)	95	92.6%	7.4%	5.3%	87.4%	-	97.9%
Georgia	**2,002**	**91.8%**	**8.2%**	**1.2%**	**90.6%**	**-**	**93.0%**

**The margin of error (MOE) is a statistic conveying the amount of random sampling error in a survey's results. It expresses the maximum expected difference between the true population parameter and a sample estimate of that parameter. The larger the MOE around an estimated value, the less accurate the estimated value is.*

Appendix B: Description of Demographic Variables, p1

Variable	How Often Missing for State Sample (%)	Source	Additional Information
Maternal Race	0.25%	Electronic Birth Records	Additional coding not needed; standard measure in GA Electronic Birth Records.
Maternal Ethnicity	0.25%	Electronic Birth Records	Additional coding not needed; standard measure in GA Electronic Birth Records.
Maternal Age	0.25%	Electronic Birth Records	Calculated by subtracting mother's DOB and child's DOB. Maternal age break-down chosen based on HEDIS measures
Maternal Education	0.25%	Electronic Birth Records	Additional coding not needed; standard measure in GA Electronic Birth Records.
Maternal Marital Status	0.25%	Electronic Birth Records	Additional coding not needed; standard measure in GA Electronic Birth Records.
WIC Enrollment	N/A	WIC Program	Yearly cumulative lists of enrolled children were used to match children from the study sample to the enrollment list using names and dates of birth. The duration of enrollment was not calculated, so the children classified as "WIC enrolled" could have been enrolled for a short amount of time or for their entire lives.
Number of Providers	5.1%	GRITS	For each administered vaccine, the provider was researched. For records where the same provider administered all vaccines, the child was classified as having "One" provider. For two different providers, the child would have "Two" providers. The number of providers was limited to 3.
Provider Type	5.1%	GRITS	For each administered vaccine, the provider was assessed as either private, public or unknown. If a child only received immunizations from a public health department, they were classified as "Public sector only". If a child received immunizations exclusively from (a) private provider/s, they were classified as "Private sector only". If they received immunizations from a mixture, they were classified as "Both private and public sector ".

Appendix C: Reasons for Incomplete Immunization History

Appendix Table C: Frequency of Reasons for Incomplete Immunizations by End of Data Collection, Georgia, 2015

A.Religious exemption
B.Medical exemption
C.Temporary vaccine shortage
D.Parent refuses to vaccinate*
E.Parent chooses to delay vaccination
F.Physician chooses to delay vaccination
G.Missed appointments/convenience issue
H.Other

District	Sample	A	B	C	D	E	F	G	H	Total
1-1 Northwest (Rome)	143	2	0	0	1	3	1	4	1	**12**
1-2 North Georgia (Dalton)	118	1	0	0	6	1	0	4	0	**12**
2-0 North (Gainesville)	122	5	0	0	3	0	0	5	0	**13**
3-1 Cobb-Douglas	93	0	0	0	2	2	1	1	3	**9**
3-2 Fulton	108	0	0	0	0	2	1	3	4	**10**
3-3 Clayton	125	1	0	0	0	0	0	1	0	**2**
3-4 Gwinnett, Newton, Rockdale	155	0	0	0	4	3	1	2	5	**15**
3-5 DeKalb	130	0	0	0	0	0	0	2	24	**26**
4-0 LaGrange	142	0	0	0	3	2	2	10	3	**20**
5-1 South Central (Dublin)	72	0	0	0	0	5	0	0	1	**6**
5-2 North Central (Macon)	83	0	0	0	0	1	0	1	3	**5**
6-0 East Central (Augusta)	88	0	0	0	0	0	0	2	1	**3**
7-0 West Central (Columbus)	129	0	0	0	0	0	0	6	0	**6**
8-1 South (Valdosta)	106	0	0	0	0	0	0	3	0	**3**
8-2 Southwest (Albany)	87	0	0	0	0	1	1	2	0	**4**
9-1 Coastal (Savannah)	112	0	0	0	0	2	1	2	0	**5**
9-2 Southeast (Waycross)	94	1	0	0	0	0	0	1	0	**2**
10 Northeast (Athens)	95	0	0	0	2	3	0	2	0	**7**
Georgia	**2,002**	**10**	**0**	**0**	**21**	**25**	**8**	**51**	**45**	**160**

*Child was classified as "Parent Refusal to Vaccinate" if a parent refused one or more vaccine series.

Appendix D: District Immunization Measures, p1

Appendix Table D-1: District Immunization Coverage Rates, 2015

Highest Rate

A. District response rate
B. UTD by 24 months, based on GRITS alone, 2015
C. UTD by 24 months, 2015
D. UTD by end of data collection, 2015
E. Five year Average UTD by 24 months, 2011-2015
F. Percent change in UTD by 24 months, 2014 to 2015
G. Percent change in UTD by end of data collection, 2014 to 2015
H. Percent change in UTD from 24 months to end of data collection, 2015

District	A (%)	B (%)	C (%)	D (%)	E (%)	F (%)	G (%)	H (%)
1-1 Northwest (Rome)	96.6	80.4	81.1	91.6	86.3	-0.3	-0.1	10.5
1-2 North Georgia (Dalton)	97.5	74.6	75.4	89.8	82.8	-2.9	-2.0	14.4
2-0 North (Gainesville)	100	73.0	78.7	89.3	83.8	-2.1	-1.5	10.7
3-1 Cobb-Douglas	100	78.5	81.7	90.3	84.3	-5.1	-7.3	8.6
3-2 Fulton	95.6	83.3	84.3	90.7	83.7	-1.3	-3.7	6.5
3-3 Clayton	93.3	83.2	87.2	96.8	80.5	15.2	10.2	9.6
3-4 East Metro (Lawrenceville)	96.9	79.4	83.2	90.3	83.5	2.2	-1.9	7.1
3-5 DeKalb	96.3	73.1	73.8	80.0	86.0	-14.9	-17.9	6.2
4-0 LaGrange	98.6	77.5	78.2	85.9	83.8	-2.1	-5.8	7.7
5-1 South Central (Dublin)	97.3	70.8	70.8	91.7	80.6	-7.0	1.6	20.8
5-2 North Central (Macon)	98.8	85.5	86.7	94.0	88.1	-1.1	-1.9	7.2
6-0 East Central (Augusta)	93.6	69.3	85.2	95.5	86.2	-0.2	-0.7	10.2
7-0 West Central (Columbus)	98.5	77.5	85.3	95.3	84.2	12.6	3.4	10.1
8-1 South (Valdosta)	94.6	89.6	89.6	96.2	87.6	7.4	-0.8	6.6
8-2 Southwest (Albany)	97.8	86.2	87.4	95.4	86.7	2.4	0.1	8.0
9-1 Coastal (Savannah)	94.1	88.4	90.2	95.5	83.1	7.1	3.3	5.4
9-2 Southeast (Waycross)	99.0	85.1	85.1	97.9	86.0	-2.7	0.5	12.8
10 Northeast (Athens)	96.9	81.1	86.3	92.6	86.3	1.8	-2.6	6.3
Georgia	**96.9**	**79.7**	**82.7**	**91.8**	**83.4**	**0.4**	**-1.7**	**9.1**

Appendix D: District Immunization Measures, p2

Appendix Table D-2: District Vaccine Antigen-Specific Immunization Measures, 2015

Highest Rate by 24 months

District	4 DTaP (%)	3+ Polio (%)	1 MMR (%)	UTD Hib (%)	HepB Birth (%)	3 HepB (%)	1 Varic. (%)	UTD PCV (%)	2+ Rota. (%)	1+ Flu (%)
1-1 Northwest (Rome)	82.5	93.7	88.8	93.0	83.9	95.1	89.5	89.5	92.3	64.3
1-2 North Georgia (Dalton)	79.7	91.5	89.0	91.5	72.9	92.4	89.8	90.7	83.9	61.0
2-0 North (Gainesville)	82.8	94.3	86.9	93.4	68.0	93.4	89.3	89.3	85.2	63.9
3-1 Cobb-Douglas	81.7	94.6	96.8	94.6	77.4	96.8	96.8	95.7	87.1	54.8
3-2 Fulton	86.1	94.4	92.6	92.6	75.9	95.4	90.7	90.7	80.6	59.3
3-3 Clayton	88.0	96.0	92.8	96.0	86.4	99.2	94.4	93.6	88.0	48.8
3-4 East Metro (Lawrenceville	85.8	92.3	89.0	91.0	75.5	92.3	90.3	88.4	84.5	60.6
3-5 DeKalb	75.4	89.2	85.4	87.7	81.5	93.1	86.9	83.8	83.1	68.5
4-0 LaGrange	79.6	94.4	88.0	92.3	76.8	94.4	89.4	89.4	85.2	61.3
5-1 South Central (Dublin)	75.0	93.1	91.7	88.9	93.1	95.8	91.7	88.9	87.5	52.8
5-2 North Central (Macon)	88.0	97.6	90.4	95.2	96.4	96.4	90.4	90.4	84.3	61.4
6-0 East Central (Augusta)	87.5	95.5	94.3	96.6	78.4	97.7	96.6	90.9	95.5	64.8
7-0 West Central (Columbus)	87.6	96.9	92.2	97.7	94.6	96.9	93.0	93.8	88.4	65.1
8-1 South (Valdosta)	92.5	98.1	95.3	96.2	92.5	99.1	96.2	95.3	89.6	64.2
8-2 Southwest (Albany)	87.4	100.0	94.3	98.9	78.2	100.0	94.3	93.1	92.0	73.6
9-1 Coastal (Savannah)	90.2	96.4	93.8	95.5	79.5	98.2	93.8	93.8	85.7	70.5
9-2 Southeast (Waycross)	86.2	97.9	92.6	94.7	87.2	97.9	94.7	91.5	86.2	60.6
10 Northeast (Athens)	90.5	96.8	94.7	96.8	84.2	96.8	92.6	93.7	89.5	61.1
Georgia	**84.7**	**94.9**	**91.2**	**93.9**	**81.8**	**95.9**	**92.0**	**91.1**	**87.0**	**62.1**

Additional Resources

For more information about the Georgia Department of Public Health Immunization Program, please visit the following website:
http://dph.georgia.gov/immunization-section

For past Georgia Immunization Study Final Reports, please visit the following website:
http://dph.georgia.gov/immunization-publications

For more information about the Georgia Department of Public Health Acute Disease Epidemiology Unit, please visit the following website:
http://dph.georgia.gov/acute-disease-epidemiology

For more information about the Centers for Disease Control and Prevention's (CDC) National Immunization Survey (NIS), please visit the following website:
http://www.cdc.gov/nchs/nis.htm

To access current vaccine schedules, vaccine information sheets and other immunization materials, please visit the Immunization Action Coalition website:
http://www.immunize.org

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